

004280 4 882485

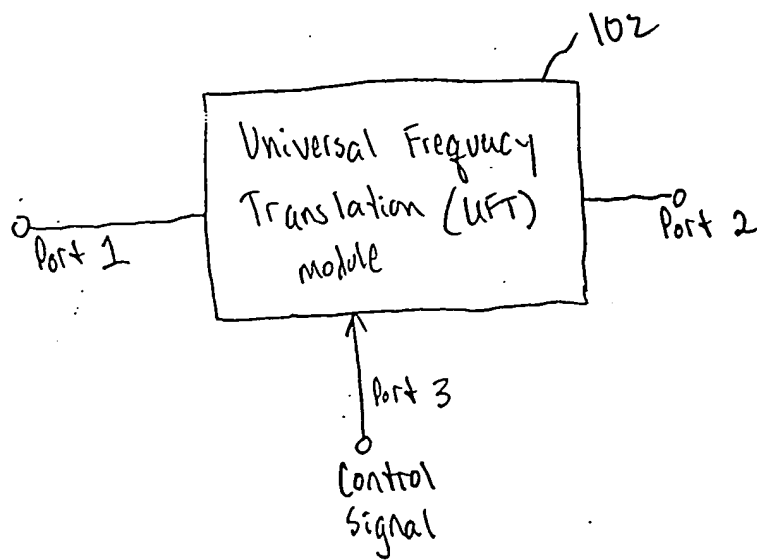


FIG. 1A

20240927 26335960

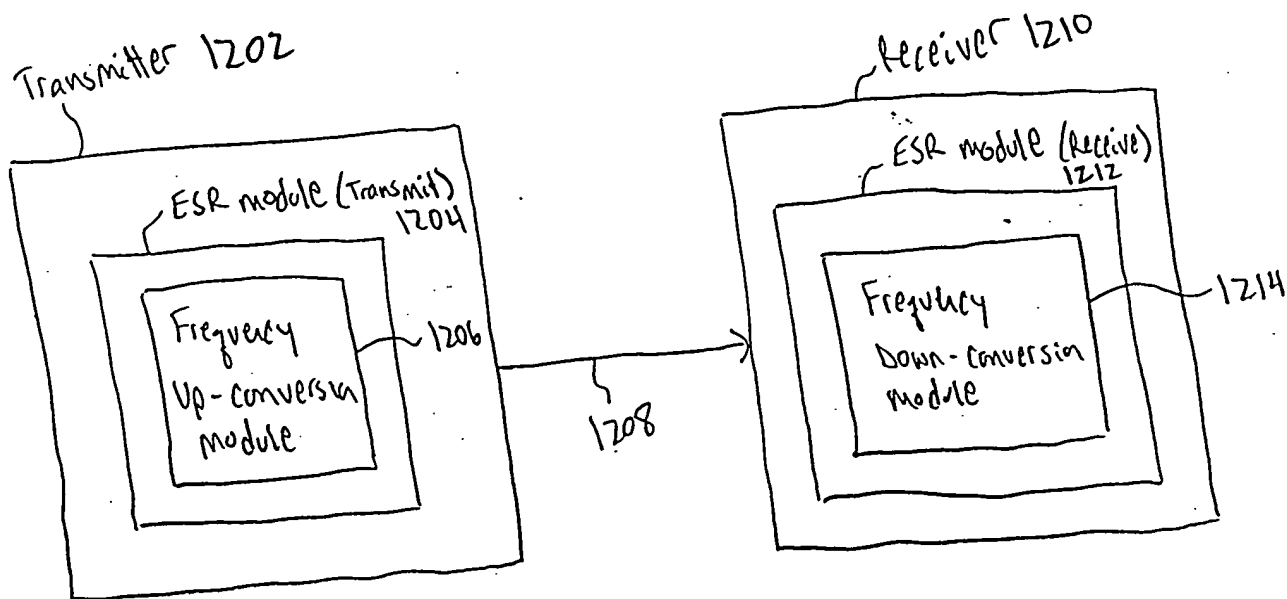


FIG. 12

004280" 6326950

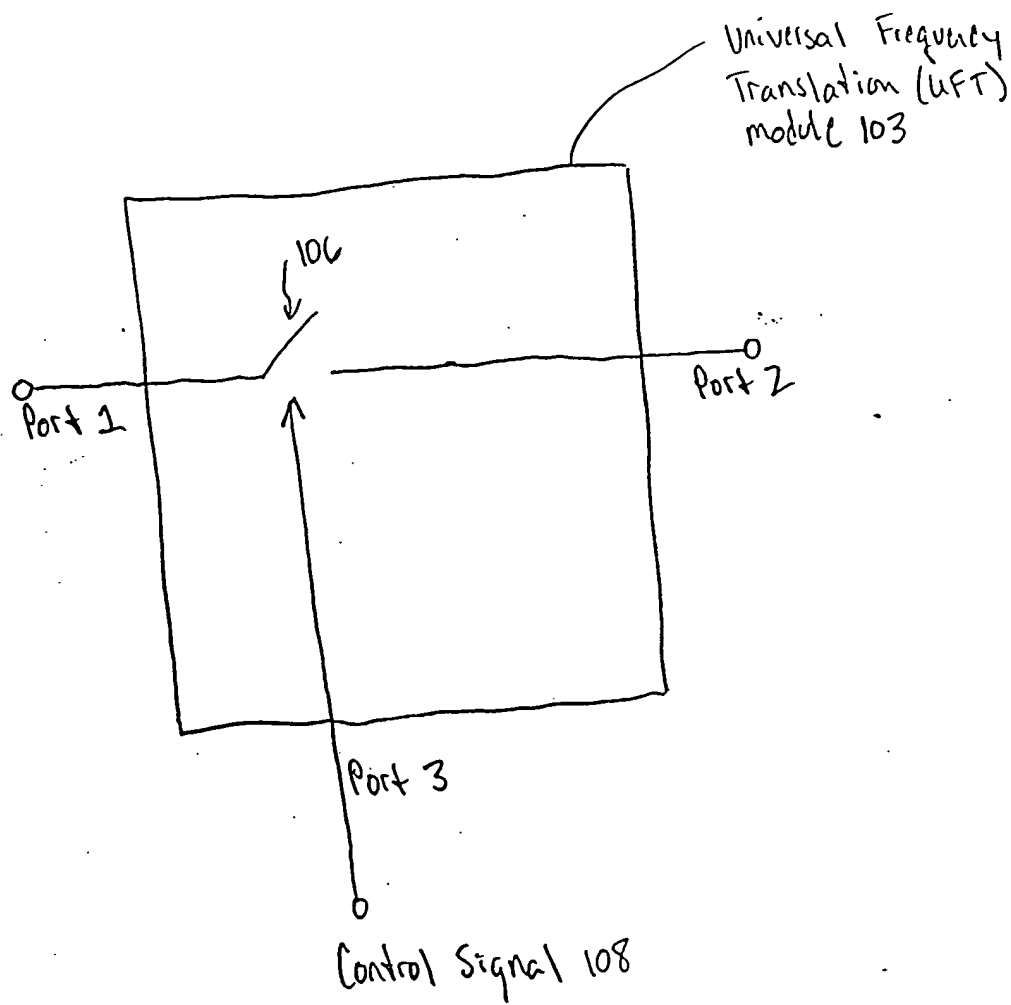


FIG. 1B

004080 / 000000

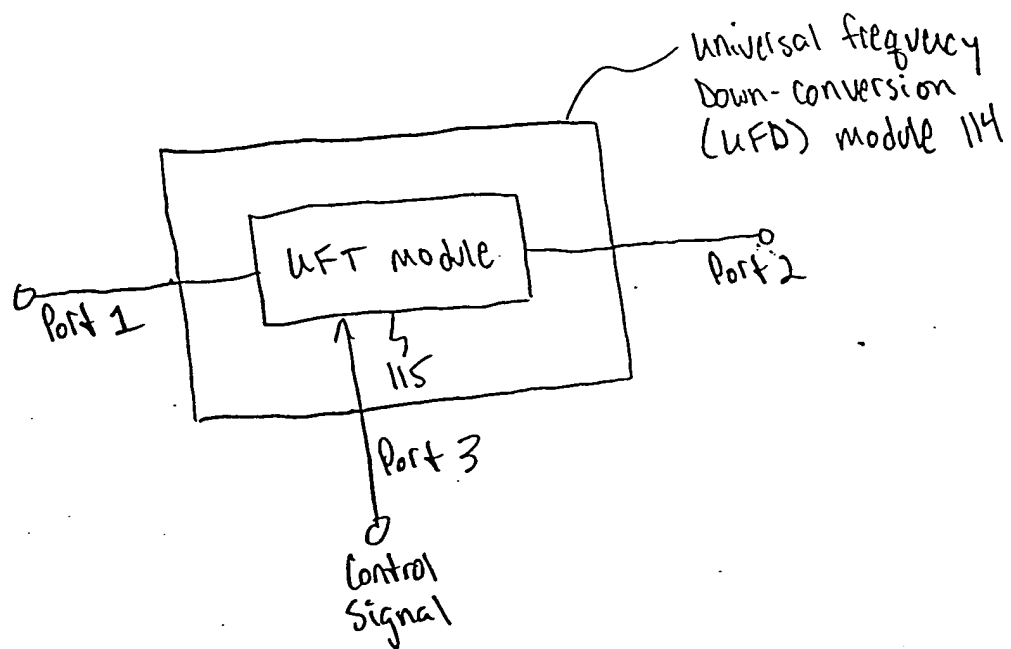


FIG. 1C

004030 2828950

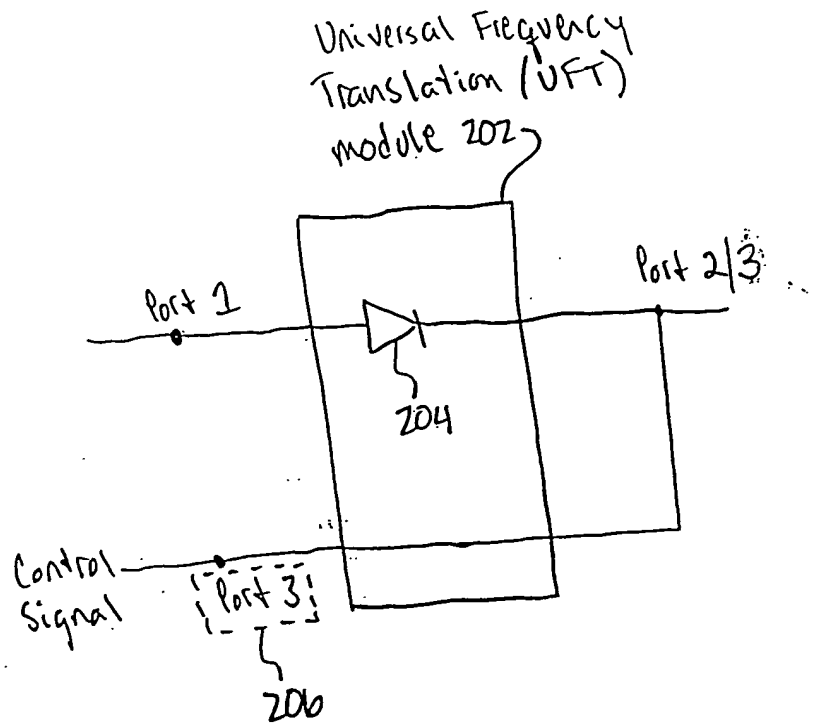


FIG. 2

Universal Frequency
Up-Conversion (UFU) module 300

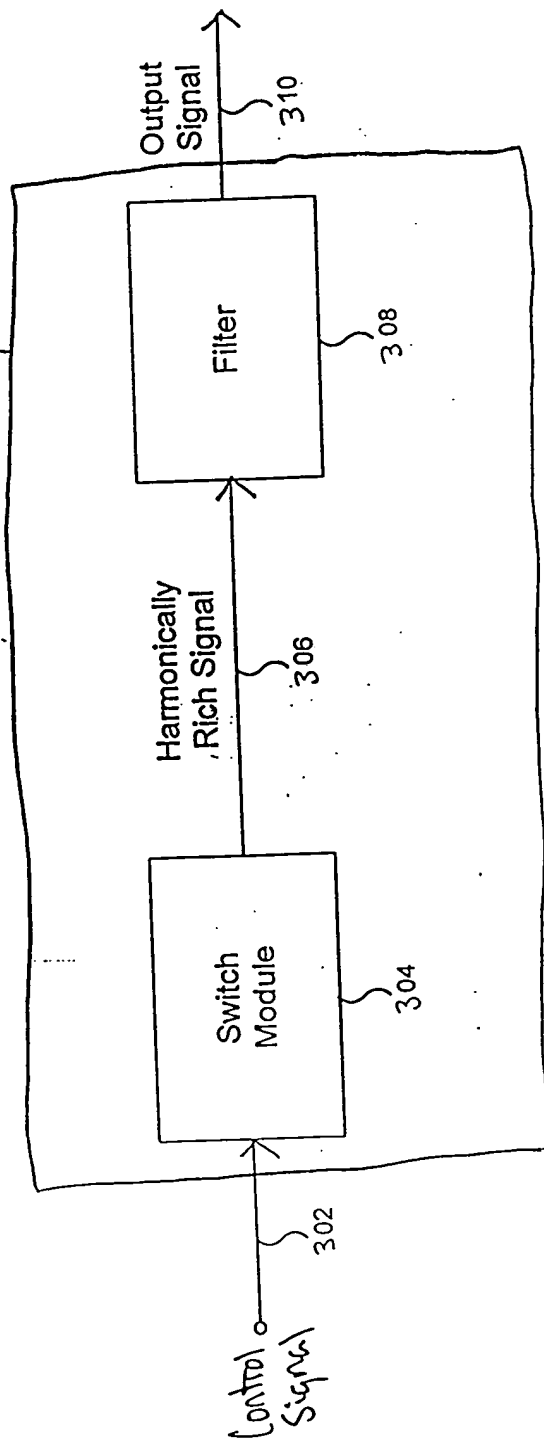


FIG. 3

Universal Frequency
Up-conversion (UFCU) module 401

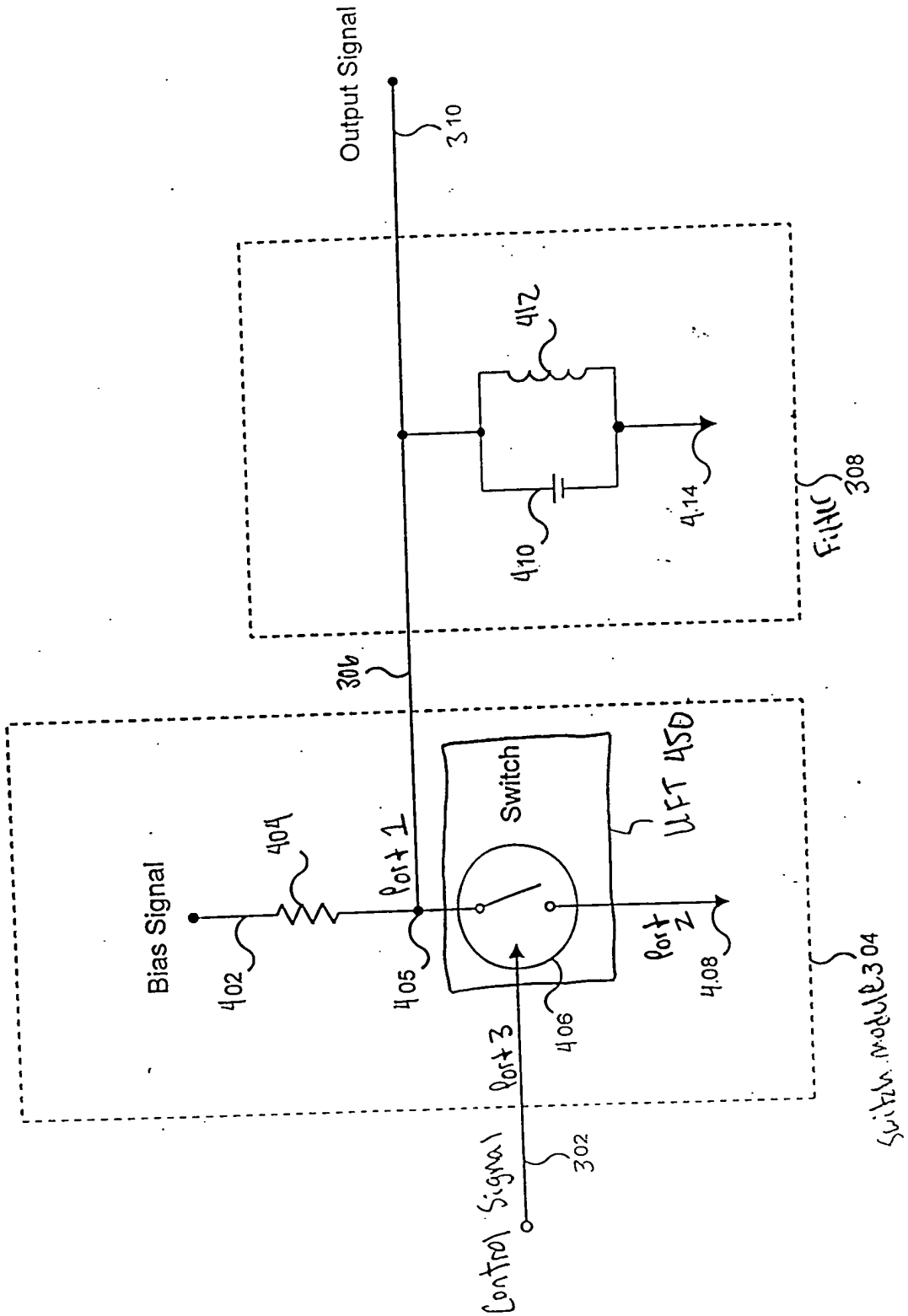


FIG. 4

Universal Frequency
up-conversion
(UFW) module 590

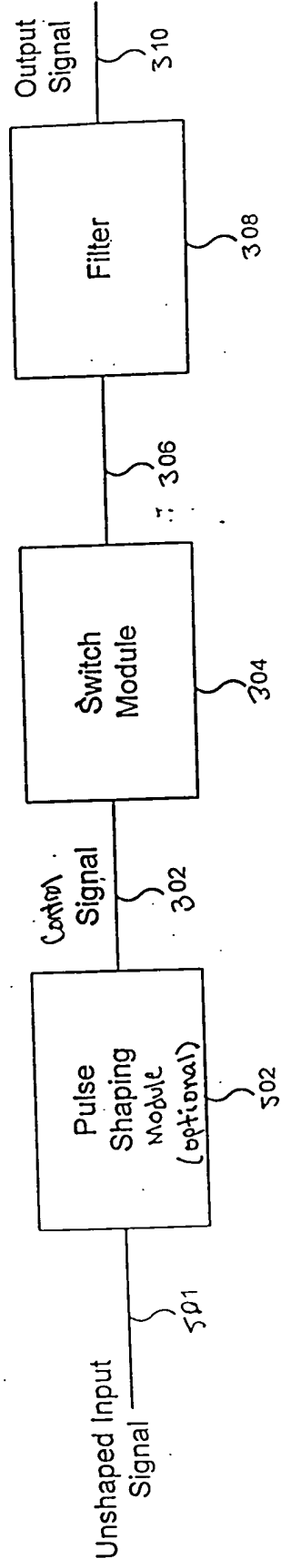
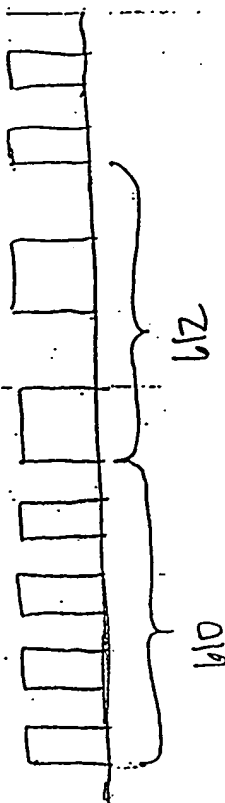


FIG. 5

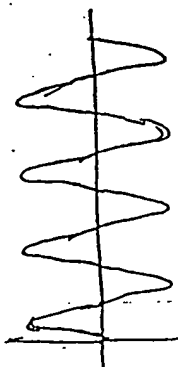
EXPANDED VIEW OF
HARMONICALLY RICH
SIGNAL 603



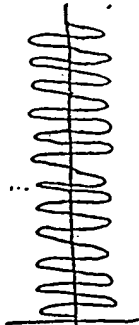
১৫

5
11
12

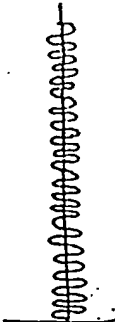
११. वि. म. म.



FUNDAMENTAL
FREQUENCY
610 A



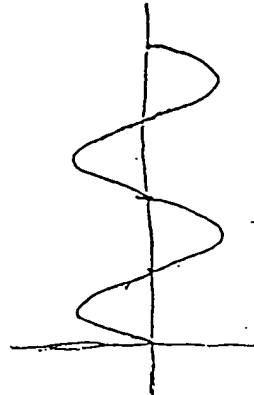
THIRD HARMONIC
610B



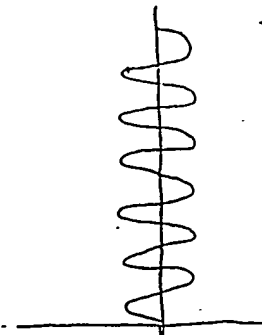
2019
FIFTH HARMONIC

Fig. 1F

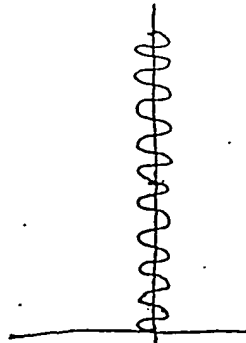
HARMONICS OF SIGNAL $u(t)$ GIVEN $s(t) = 1.1$



FUNDAMENTAL
FREQUENCY
612A



612B
THIRD HARMONIC

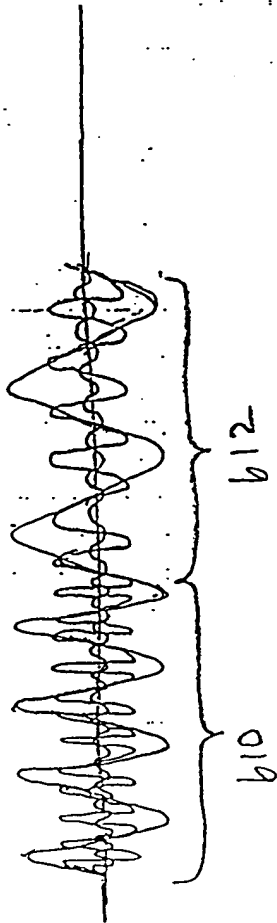


FIFTH HARMONIC
6.12C.

FIG 66

FIG. 6 (cont)

HARMONICS OF
SIGNAL SAID AND
612. (SHOWN
SIMULTANEOUSLY BUT
NOT SUMMED)



#9
517

FILTERED
OUTPUT
SIGNAL

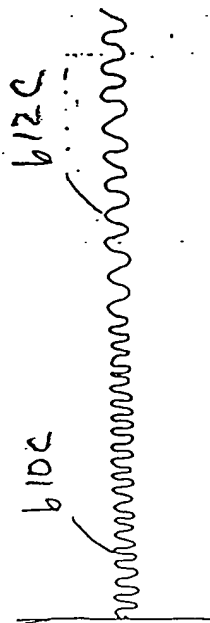


FIG. 6I

FIG 6 (cont)

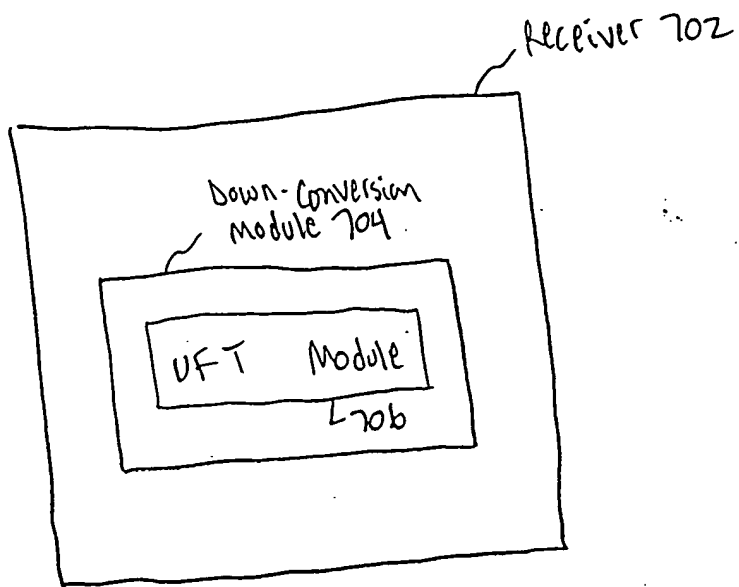


FIG. 7

W

FIG. 9

004037 15020000

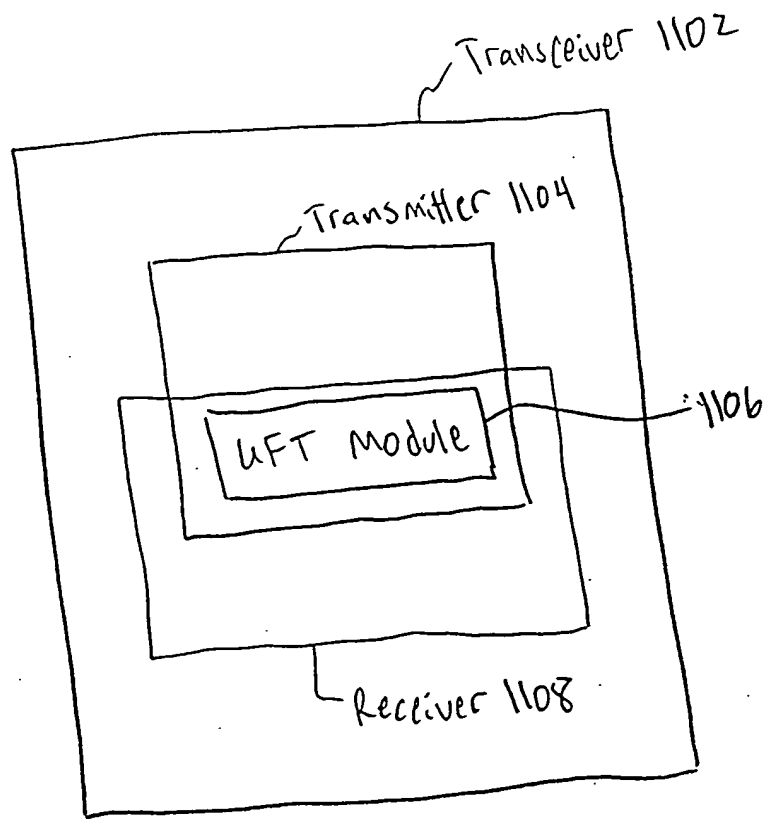


FIG. 11

Unified Down-converting
and Filtering (UDF) module 1302

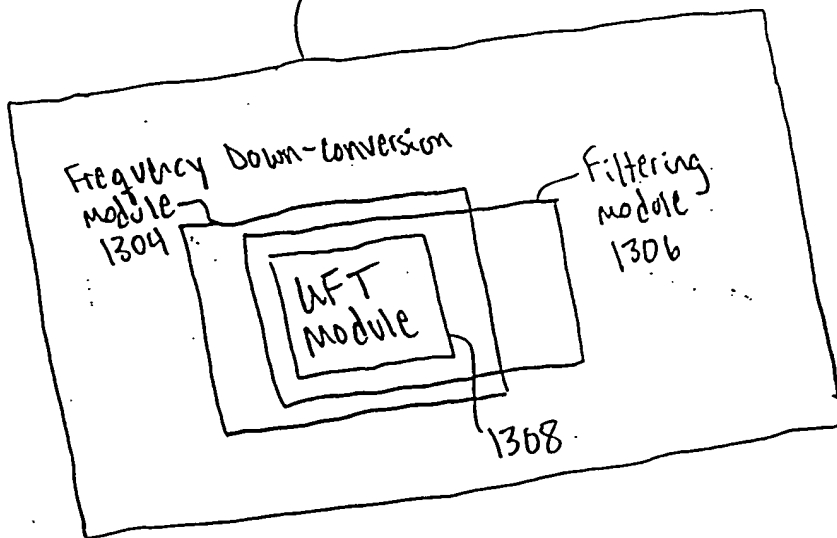


FIG. 13

004000-20020000

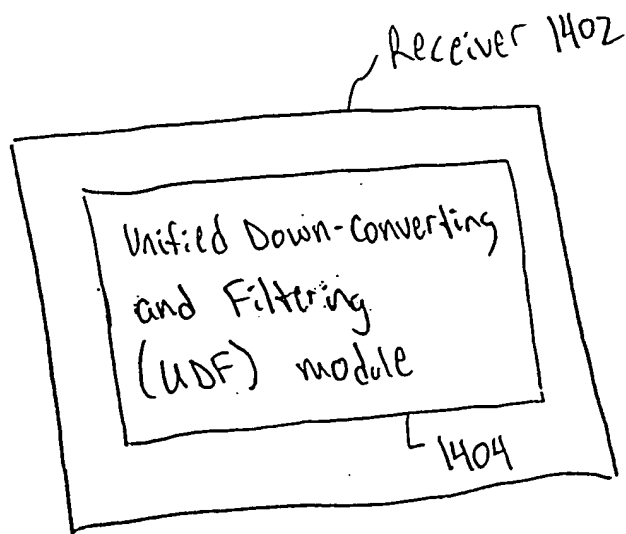


FIG. 14

004080 2636960



FIG. 15A

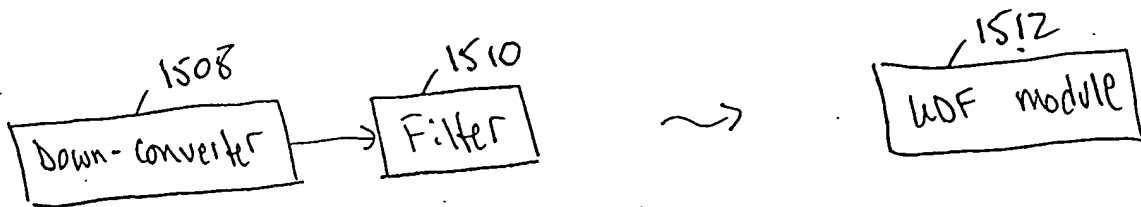


FIG. 15B

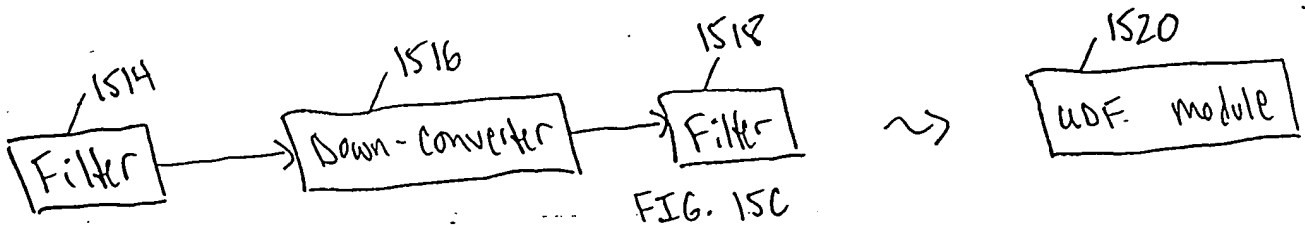


FIG. 15C

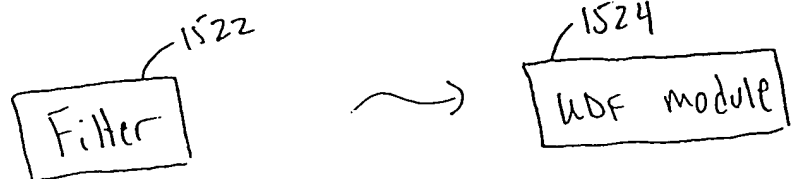
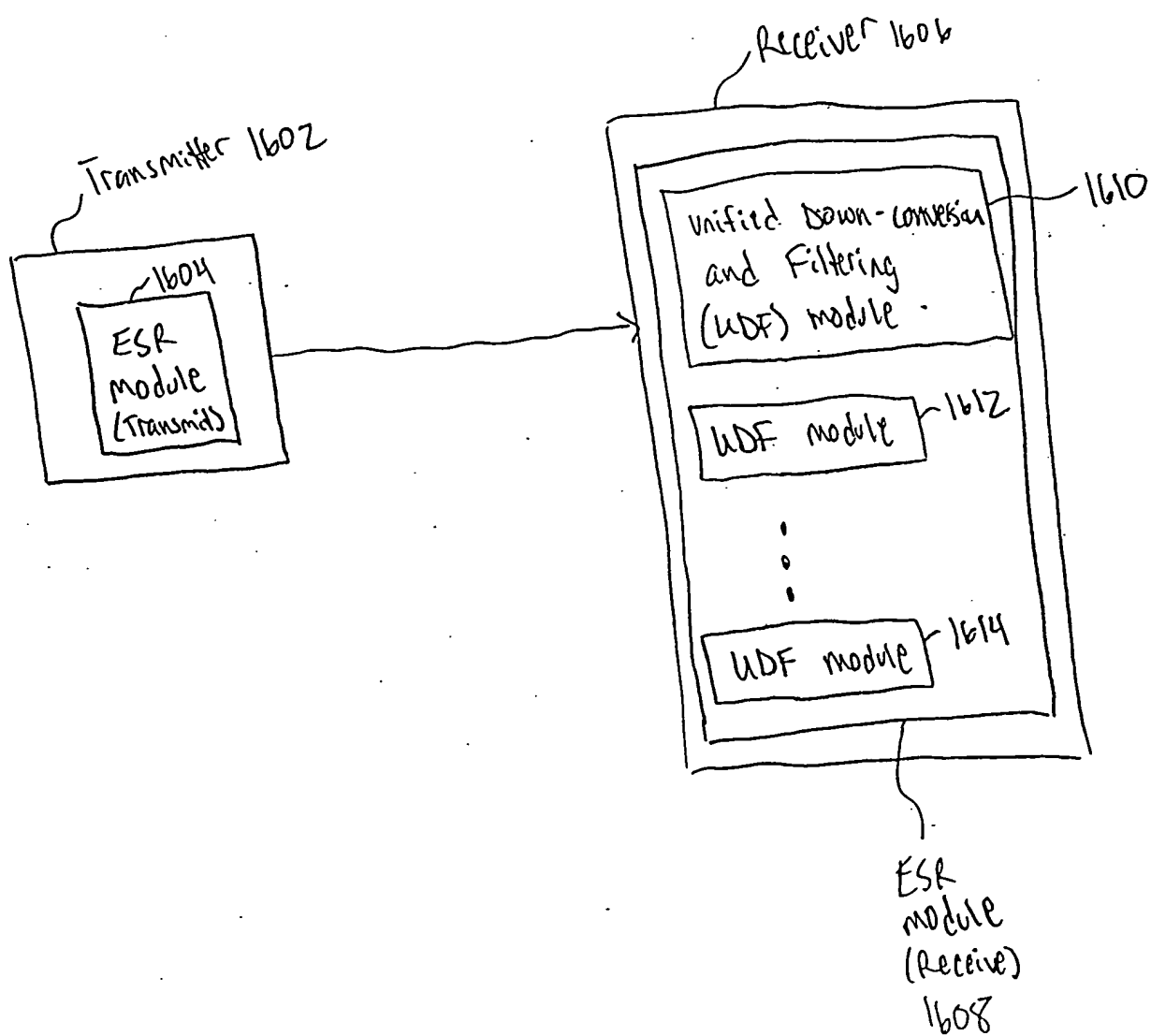


FIG. 15D



FIG. 15E

004080-2532E950



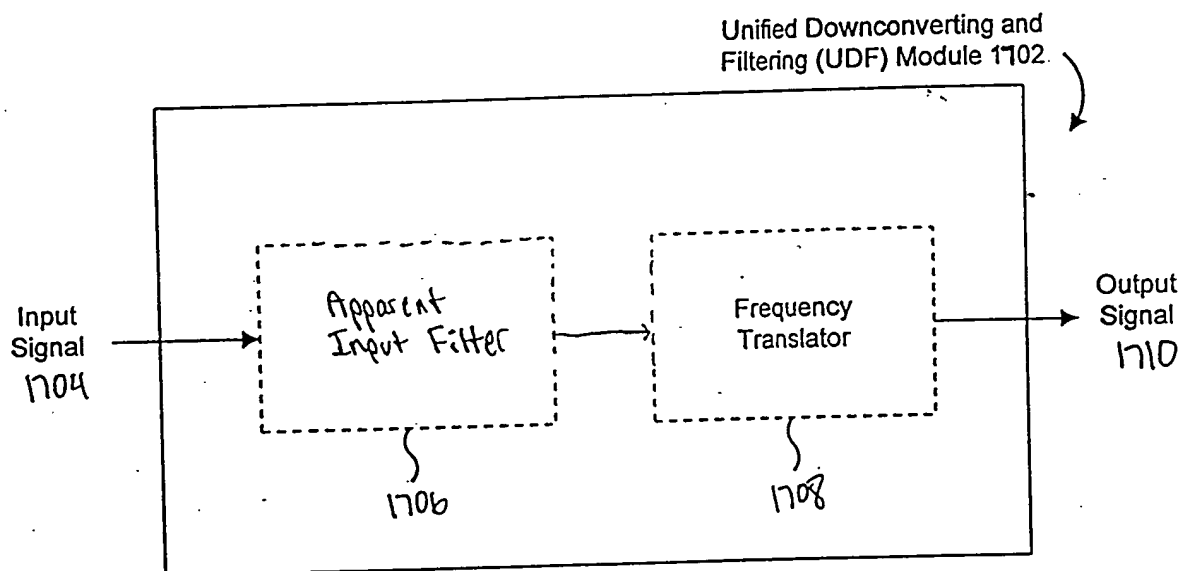


FIG. 17

1802

| Time Node | t-1 (rising edge of ϕ_1) | t-1 (rising edge of ϕ_2) | t (rising edge of ϕ_1) | t (rising edge of ϕ_2) | t+1 (rising edge of ϕ_1) |
|--------------|--------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--|
| 1902 | VI_{t-1} <u>1804</u> | VI_{t-1} <u>1808</u> | VI_t <u>1816</u> | VI_t <u>1826</u> | VI_{t+1} <u>1838</u> |
| 1904 | — | VI_{t-1} <u>1810</u> | VI_{t-1} <u>1818</u> | VI_t <u>1828</u> | VI_t <u>1840</u> |
| 1906 | VO_{t-1} <u>1806</u> | VO_{t-1} <u>1812</u> | VO_t <u>1820</u> | VO_t <u>1830</u> | VO_{t+1} <u>1842</u> |
| 1908 | — | VO_{t-1} <u>1814</u> | VO_{t-1} <u>1822</u> | VO_t <u>1832</u> | VO_t <u>1844</u> |
| 1910 | — <u>1807</u> | — | VO_{t-1} <u>1824</u> | VO_{t-1} <u>1834</u> | VO_t <u>1846</u> |
| 1912 | — | — <u>1815</u> | — | VO_{t-1} <u>1836</u> | VO_{t-1} <u>1848</u> |
| 1918 | — | — | — | — | VI_t - <u>1850</u> $0.1 * VO_t$ $0.8 * VO_{t-1}$ |

FIG. 18

004030" 2532E 350

VOF module 1972
(band pass)

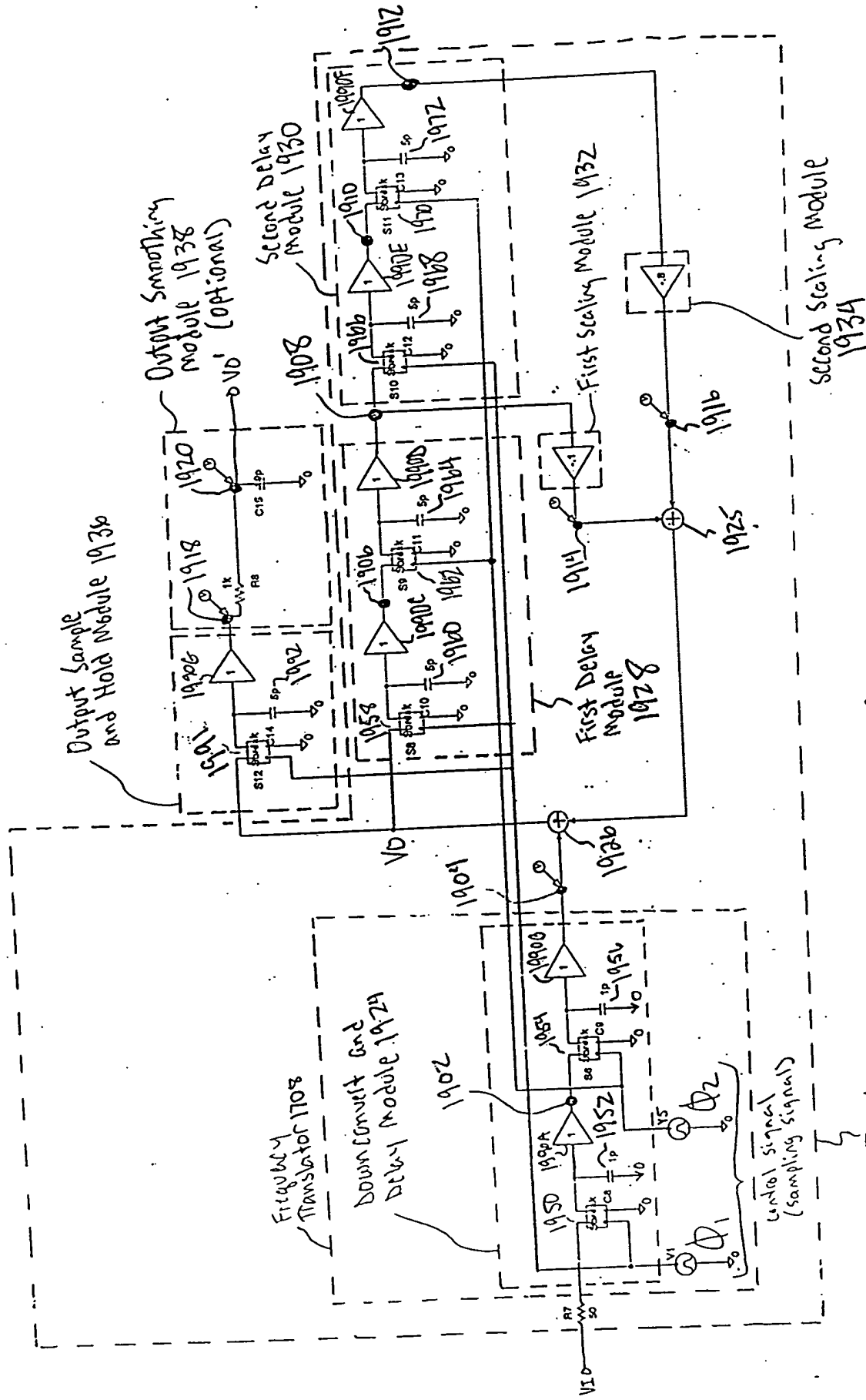


FIG. 19

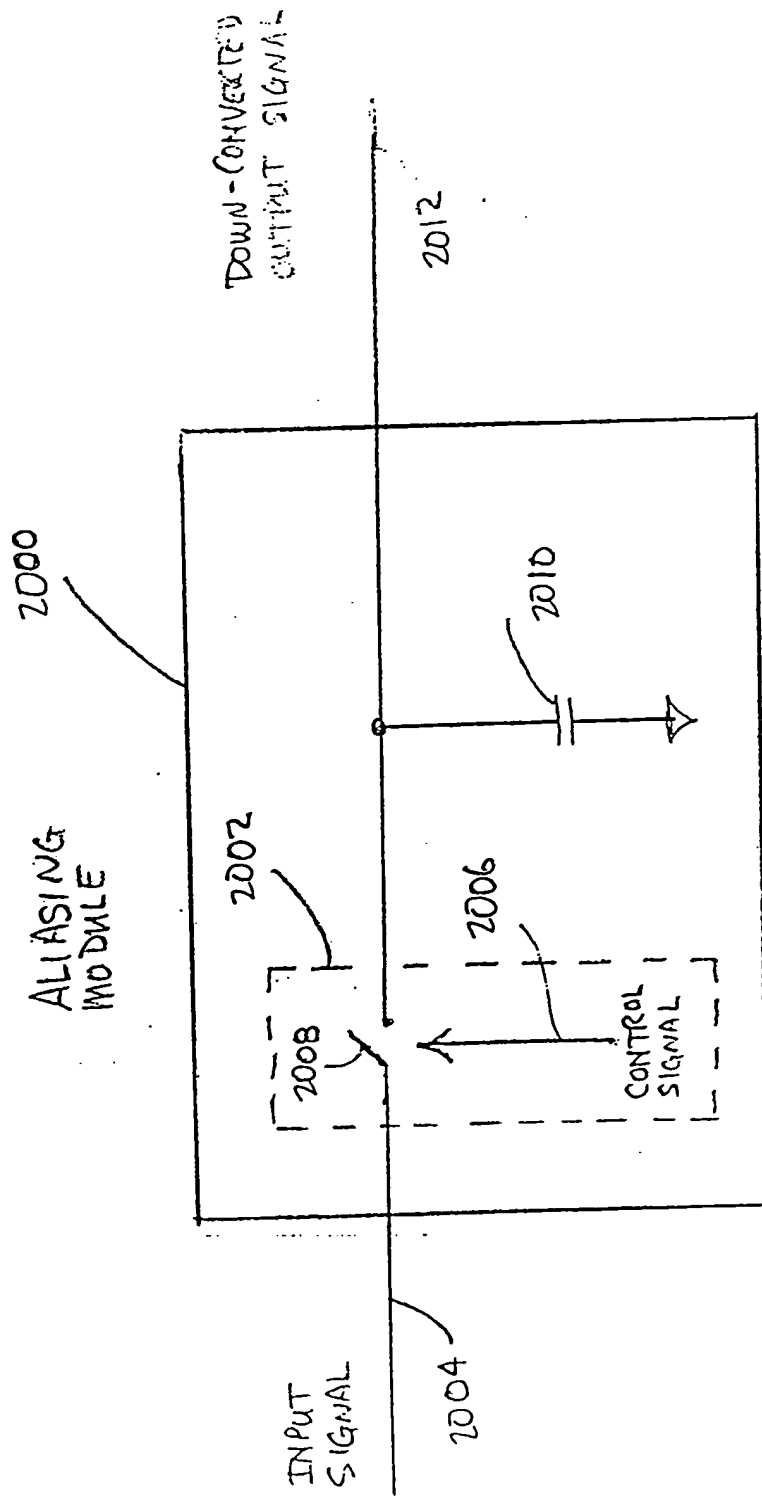


FIG. 20A

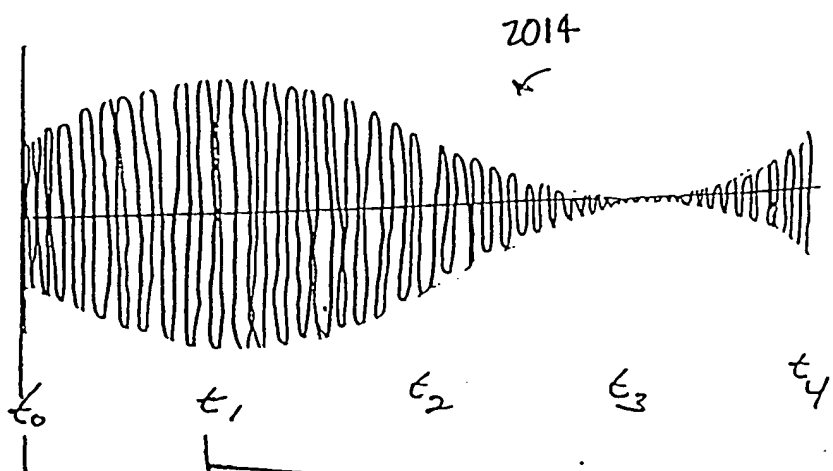


FIG. 20B

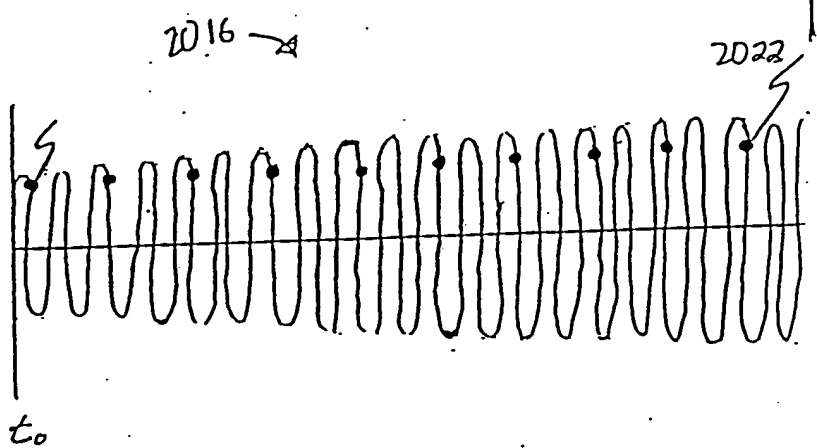


FIG. 20C

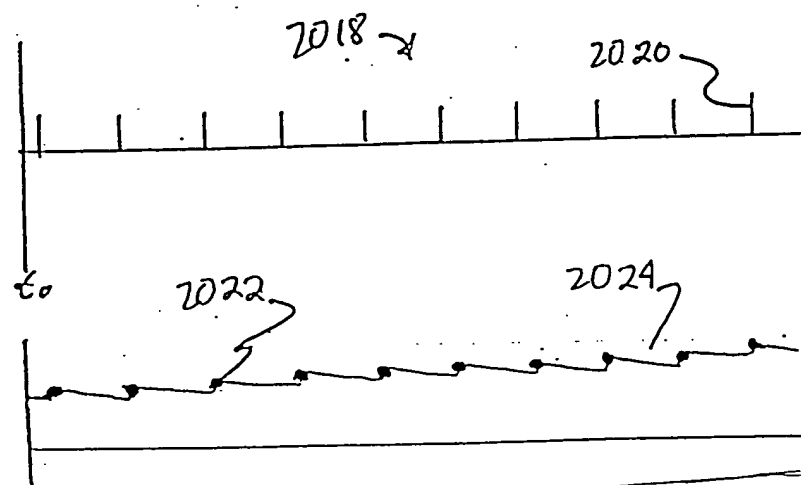


FIG. 20D

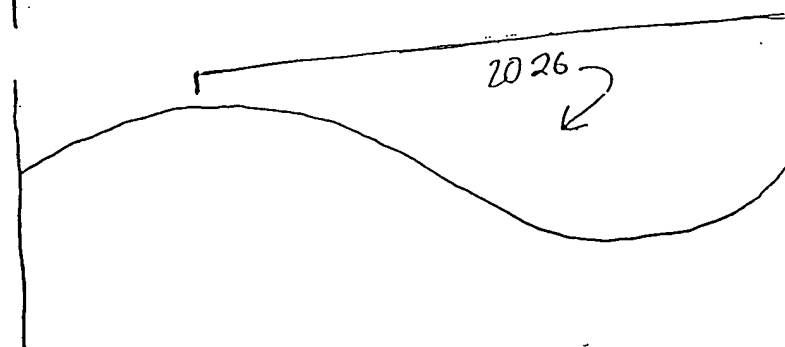


FIG. 20E

FIG. 20F

004000 259995 030400 033257 036325

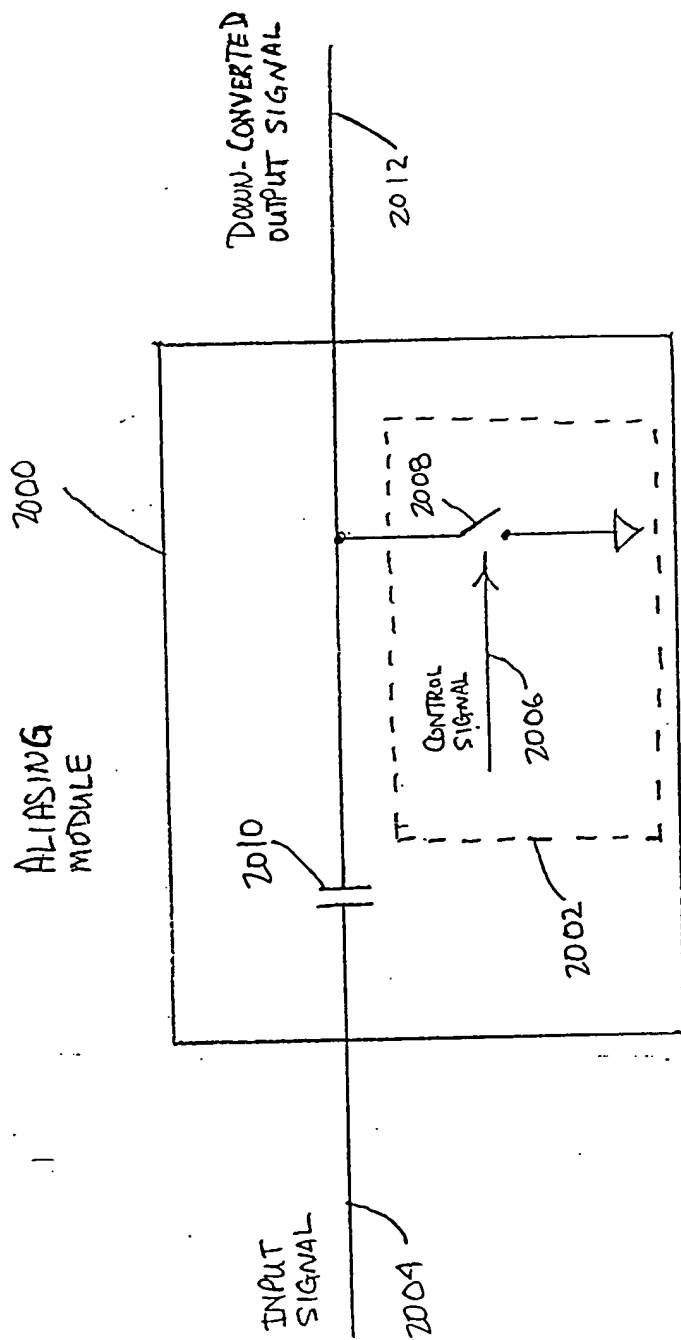
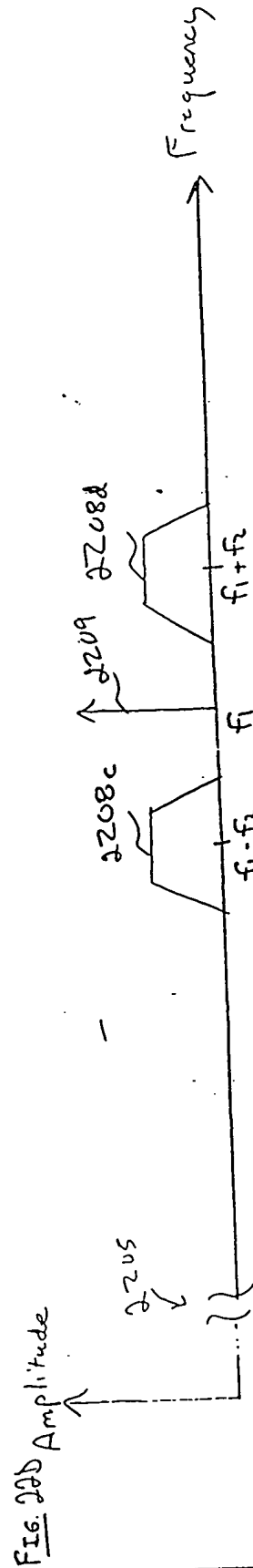
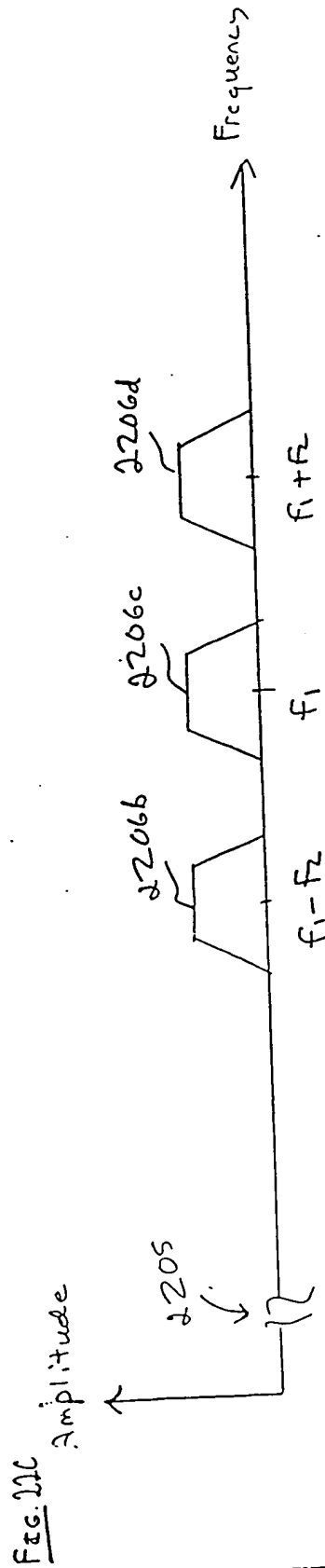
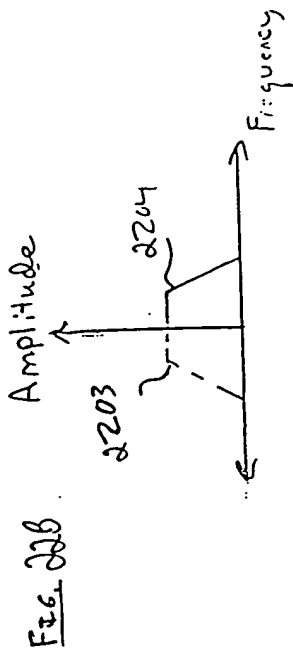
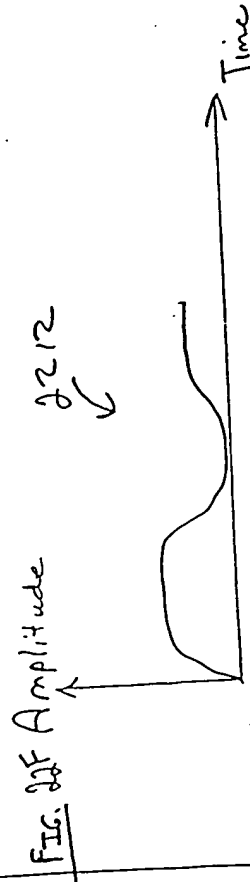
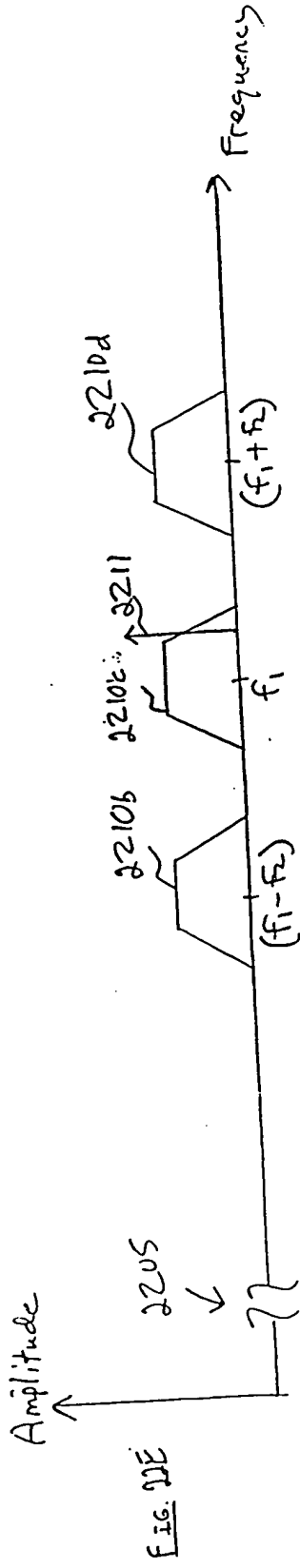


FIG. 20G



42-382 100 RECYCLED WHITE 5 SQUARE
42-390 200 RECYCLED WHITE 5 SQUARE
MADE IN U.S.A.





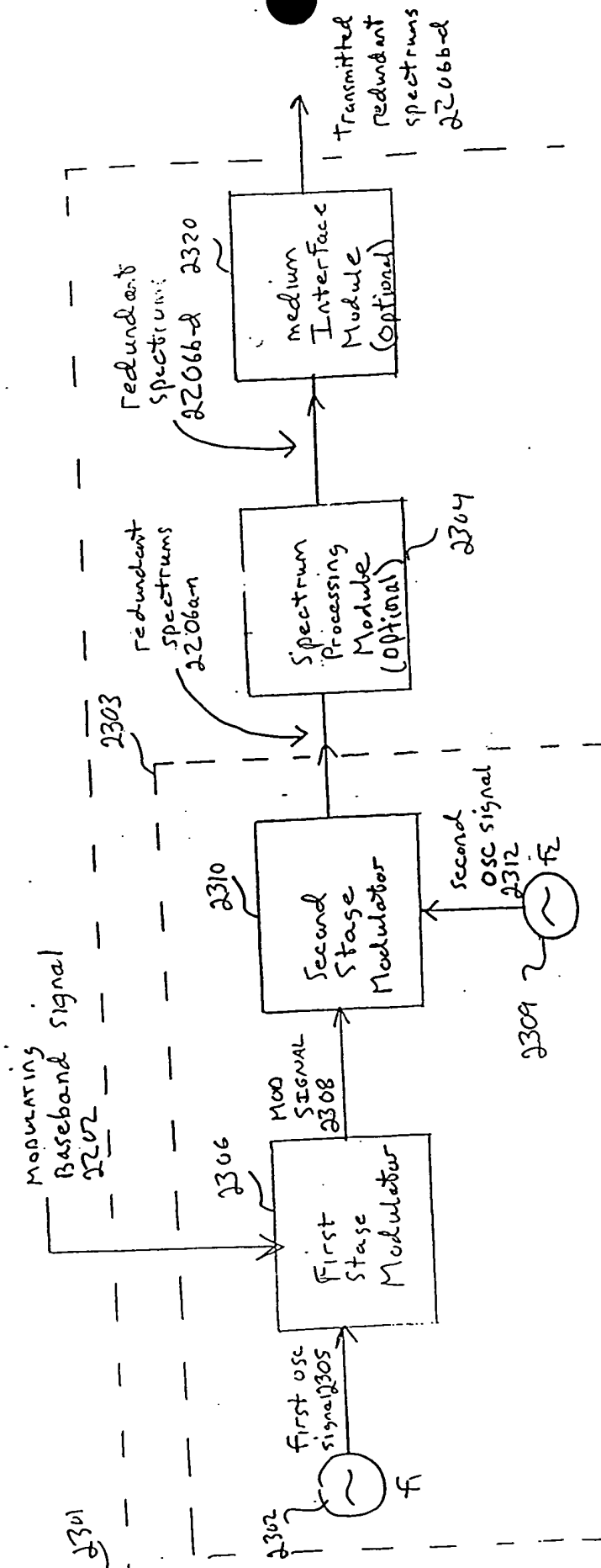
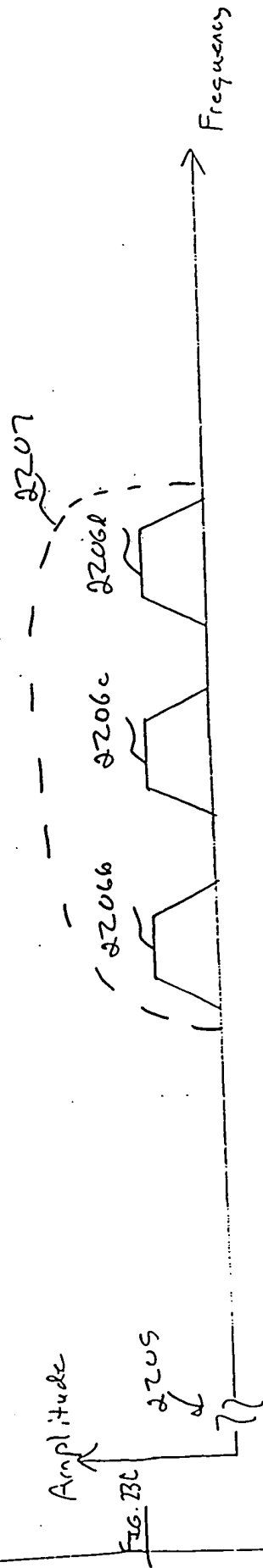
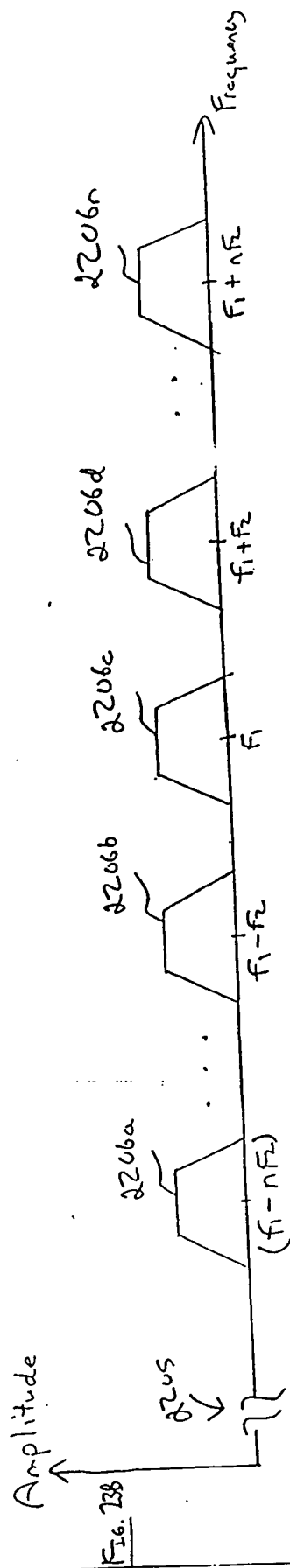


Fig. 23A



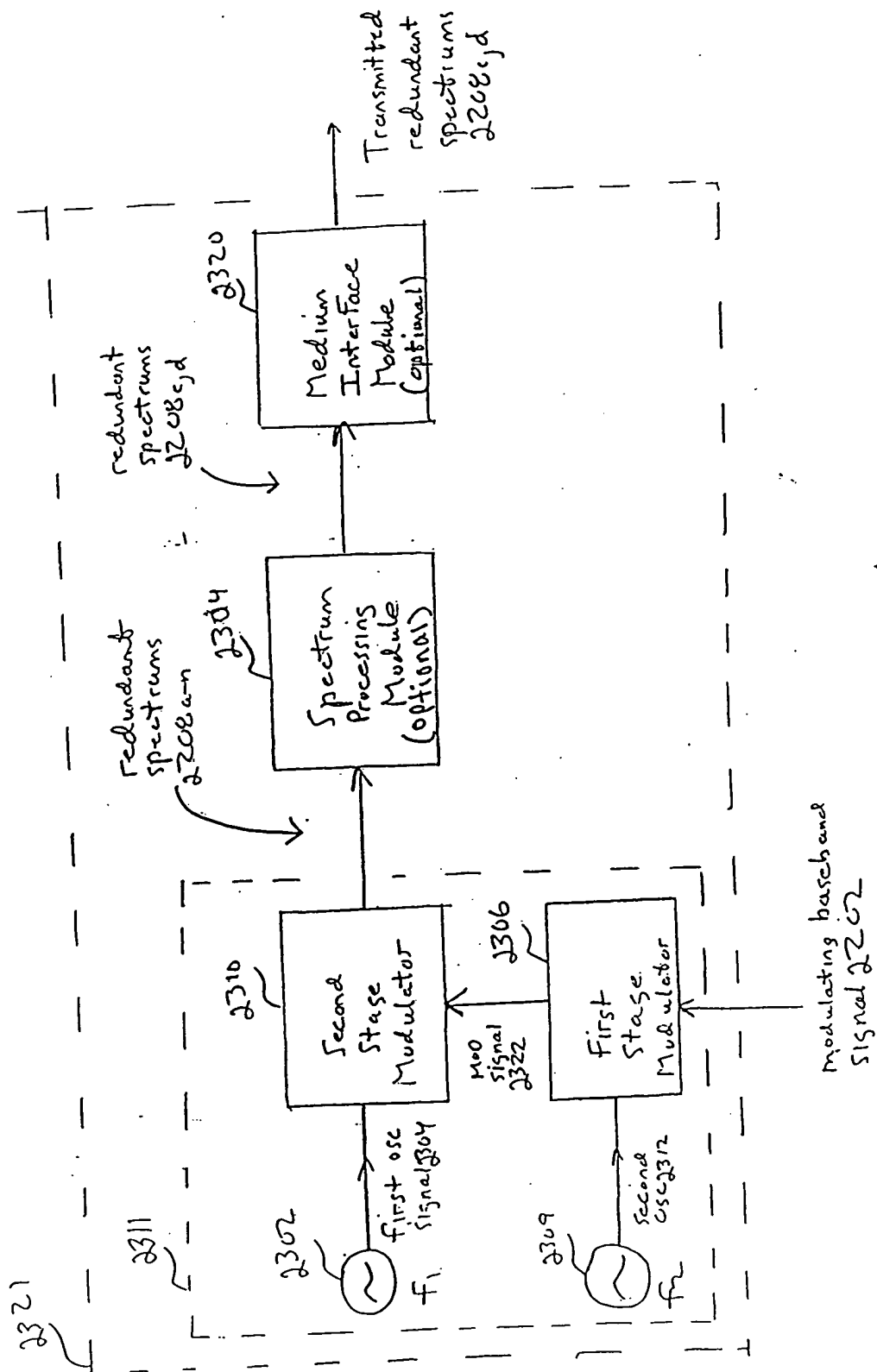


FIG. 23D

FIG. 23E

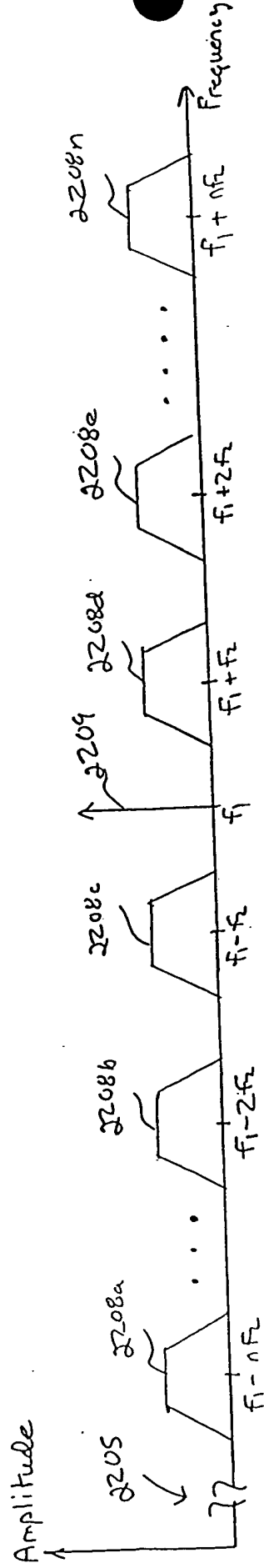
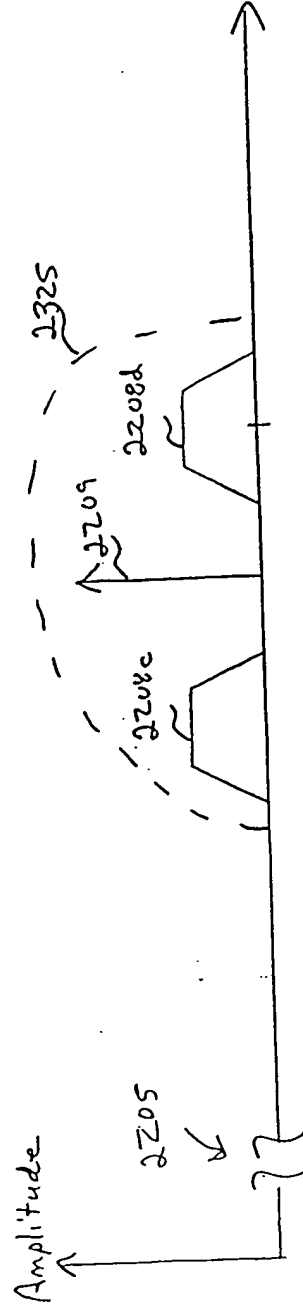


FIG. 23F



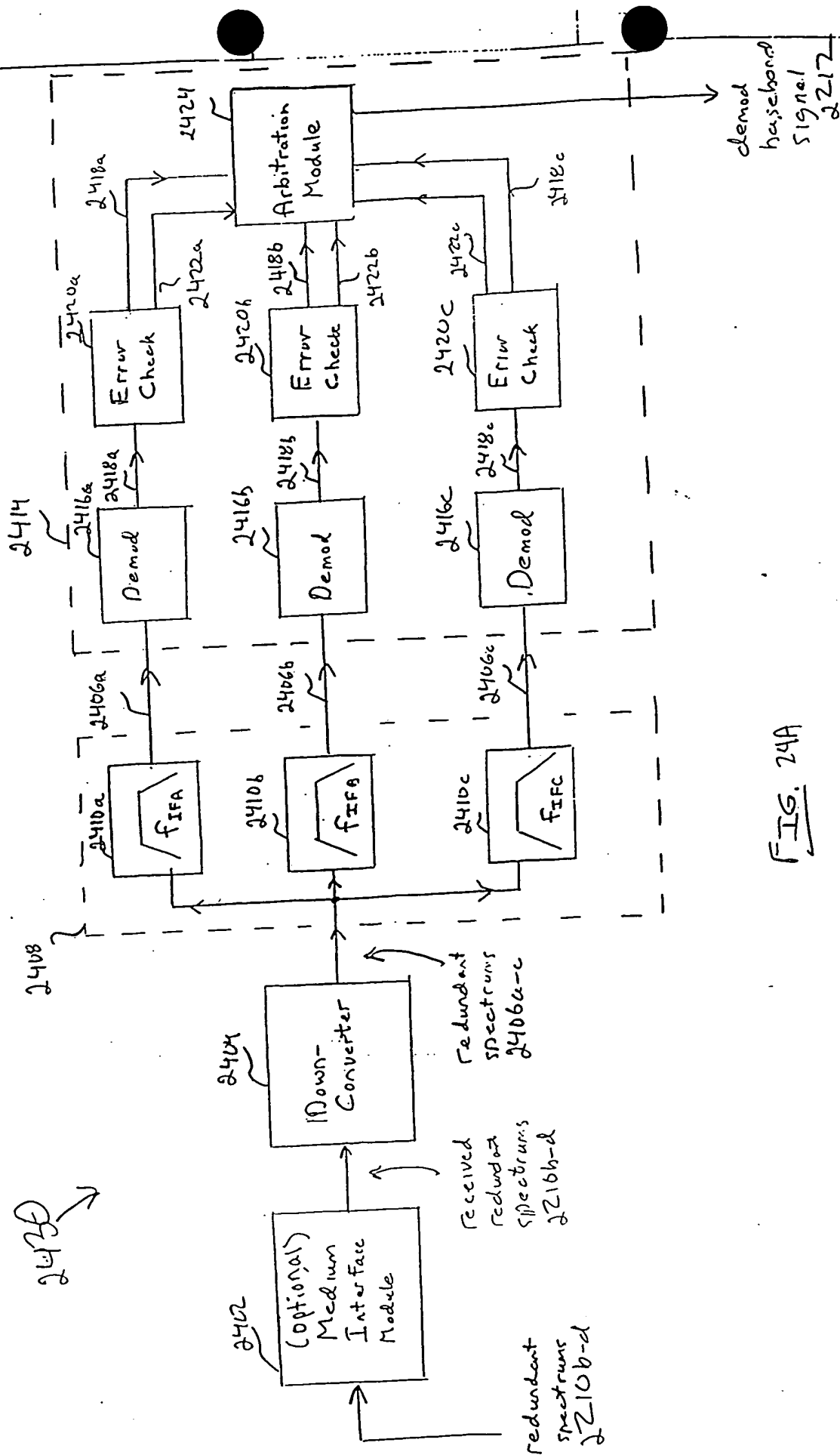
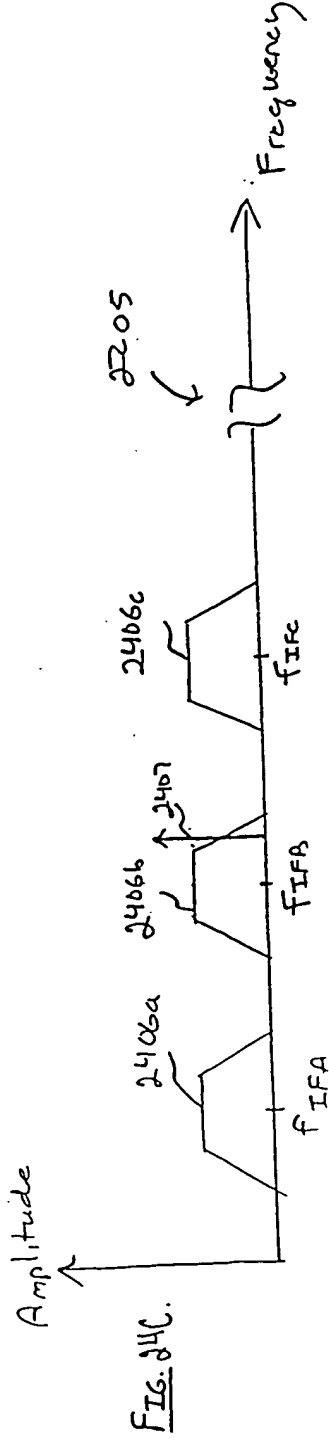
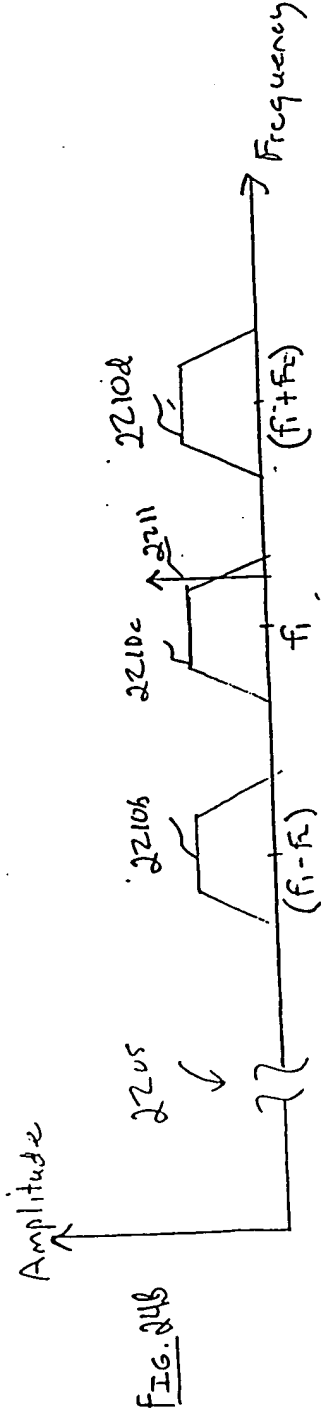
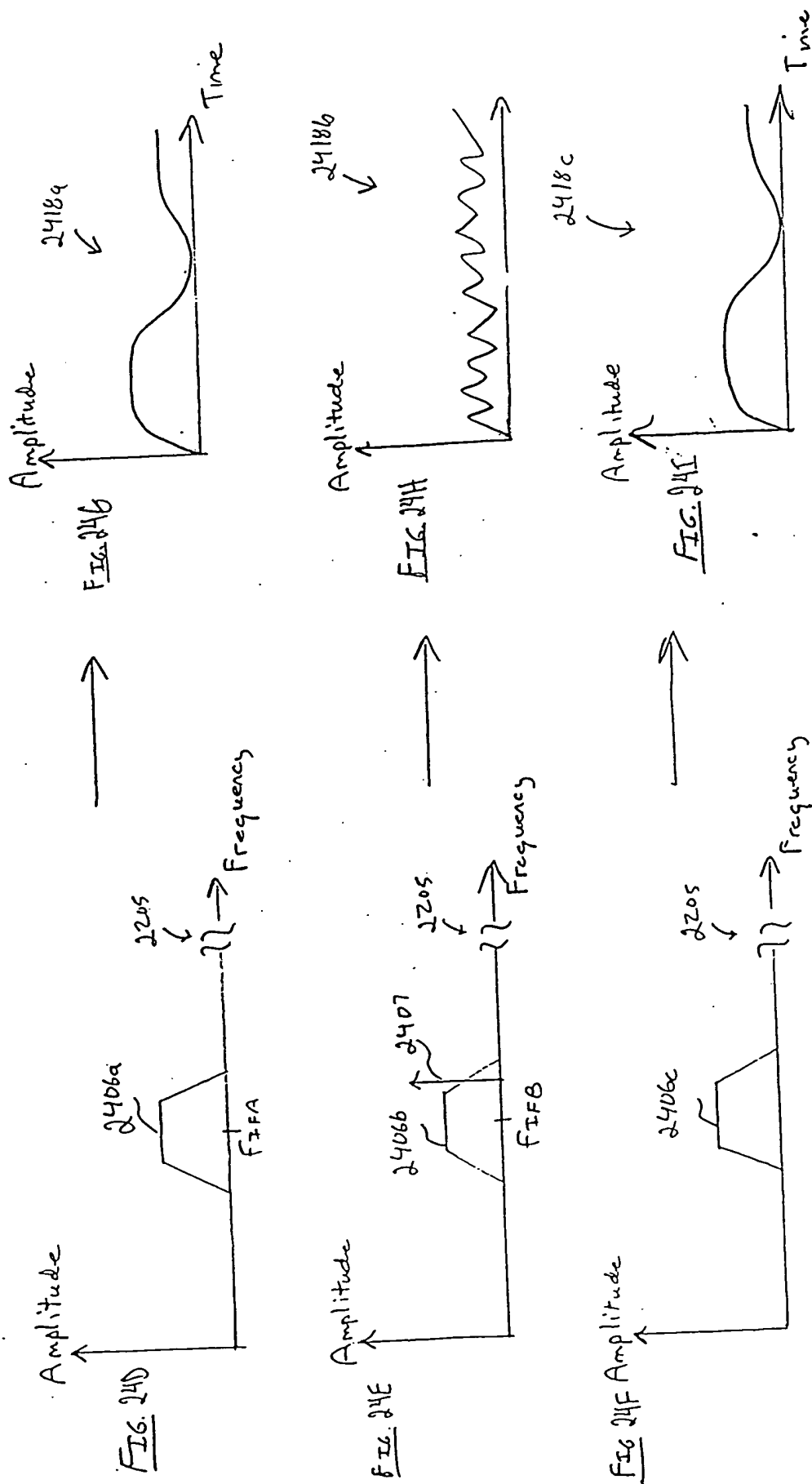
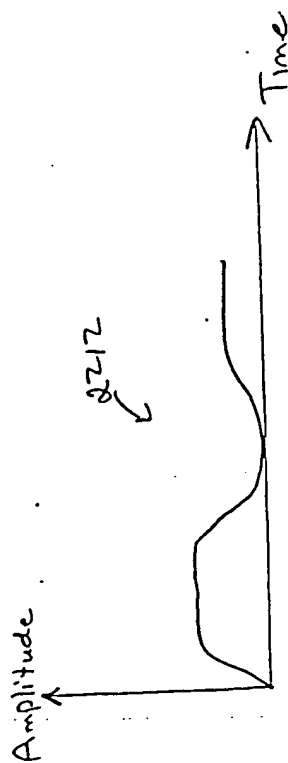


FIG. 24A





National Brand



FC: 245

2502

Network 2534

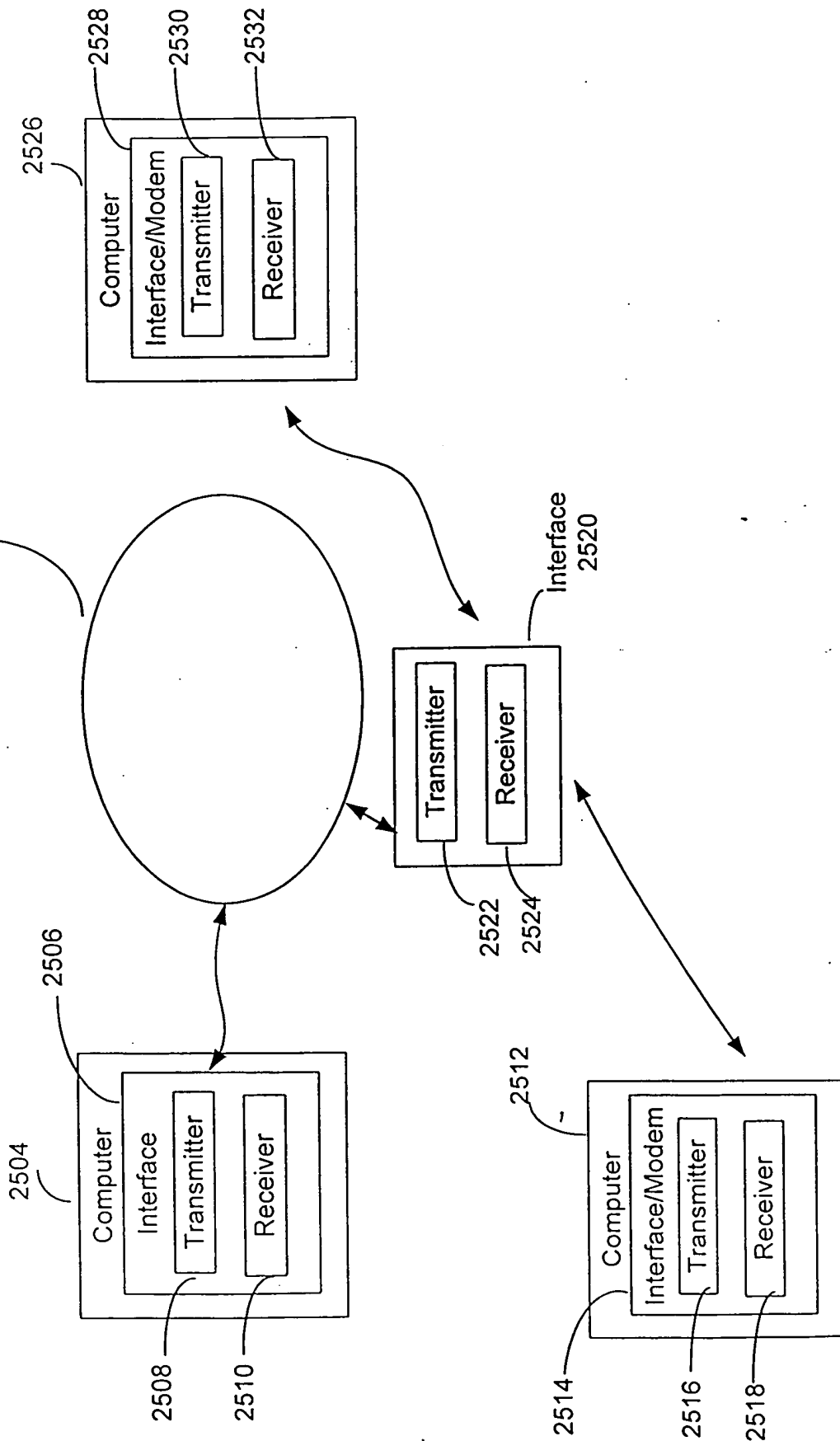
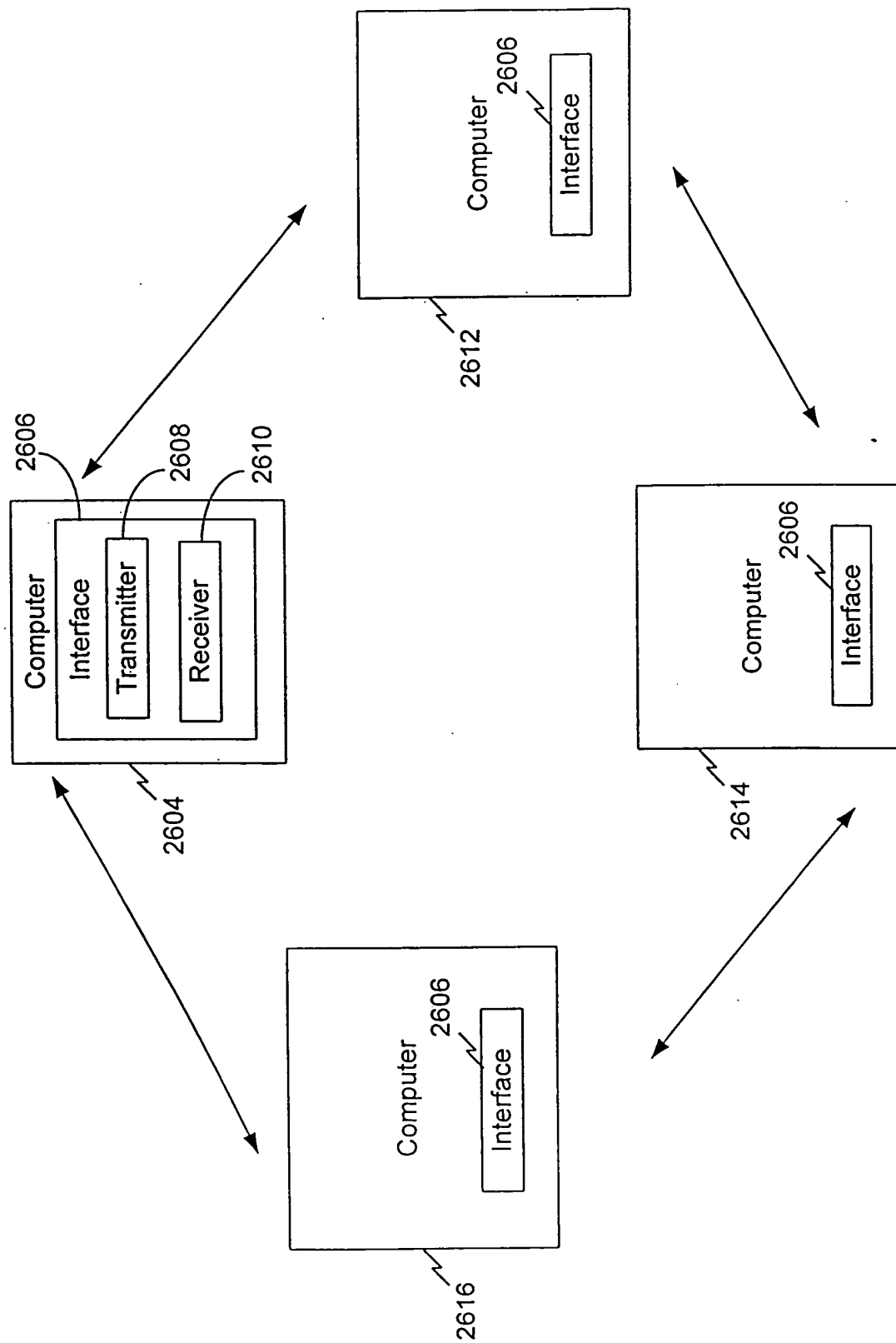


FIG. 25



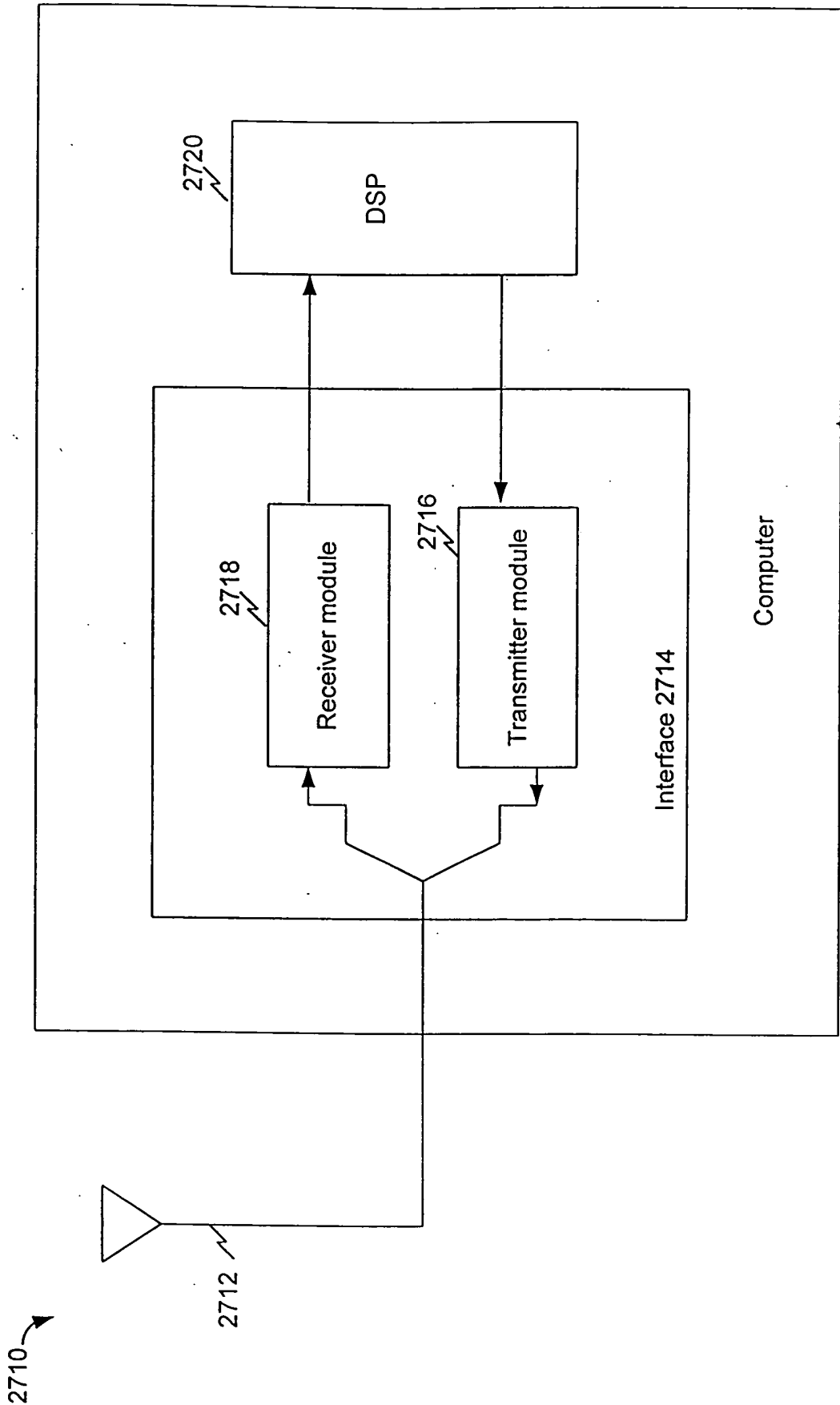
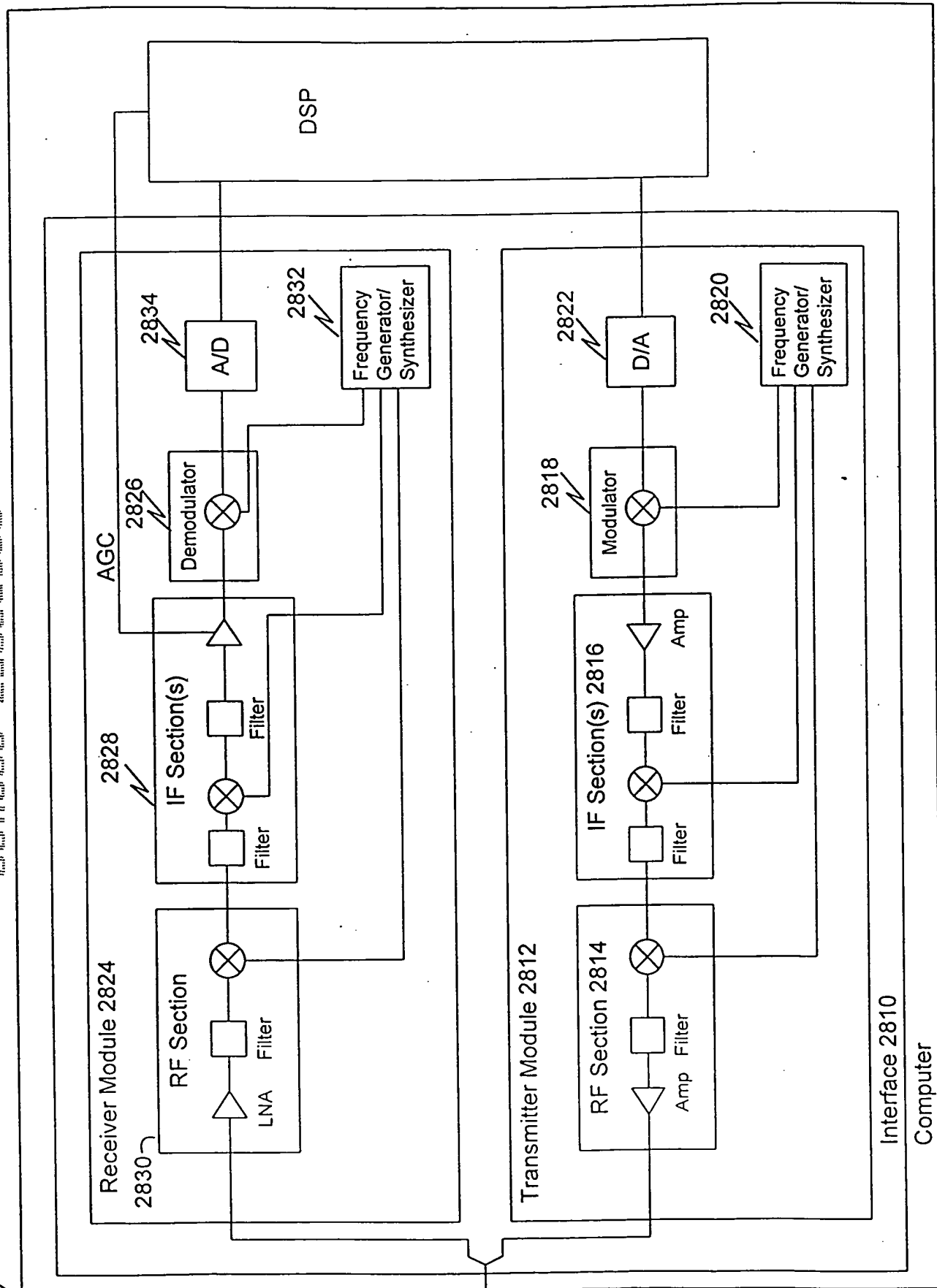


FIG. 27



Heterodyne Implementation

FIG. 28

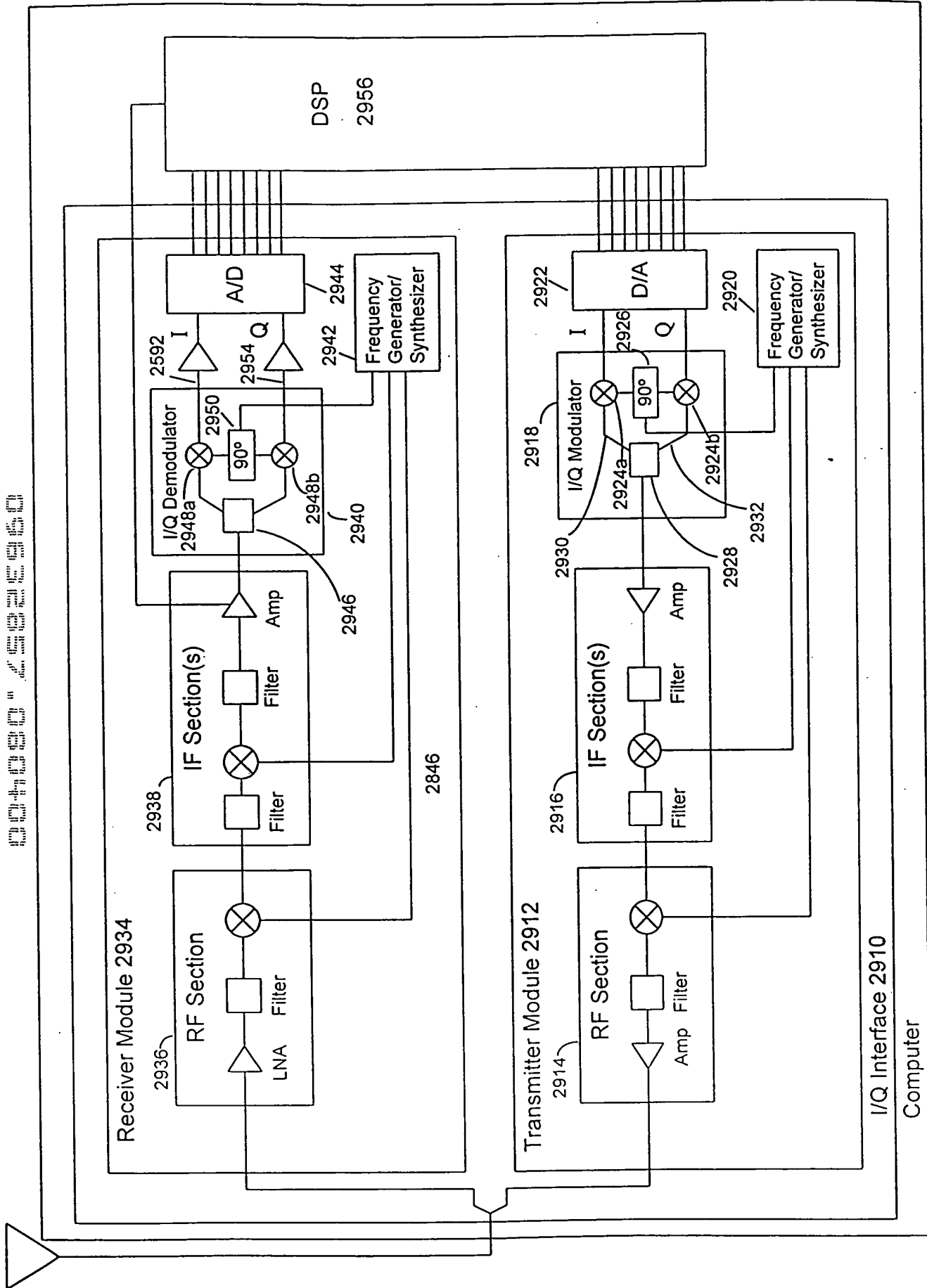


FIG. 29

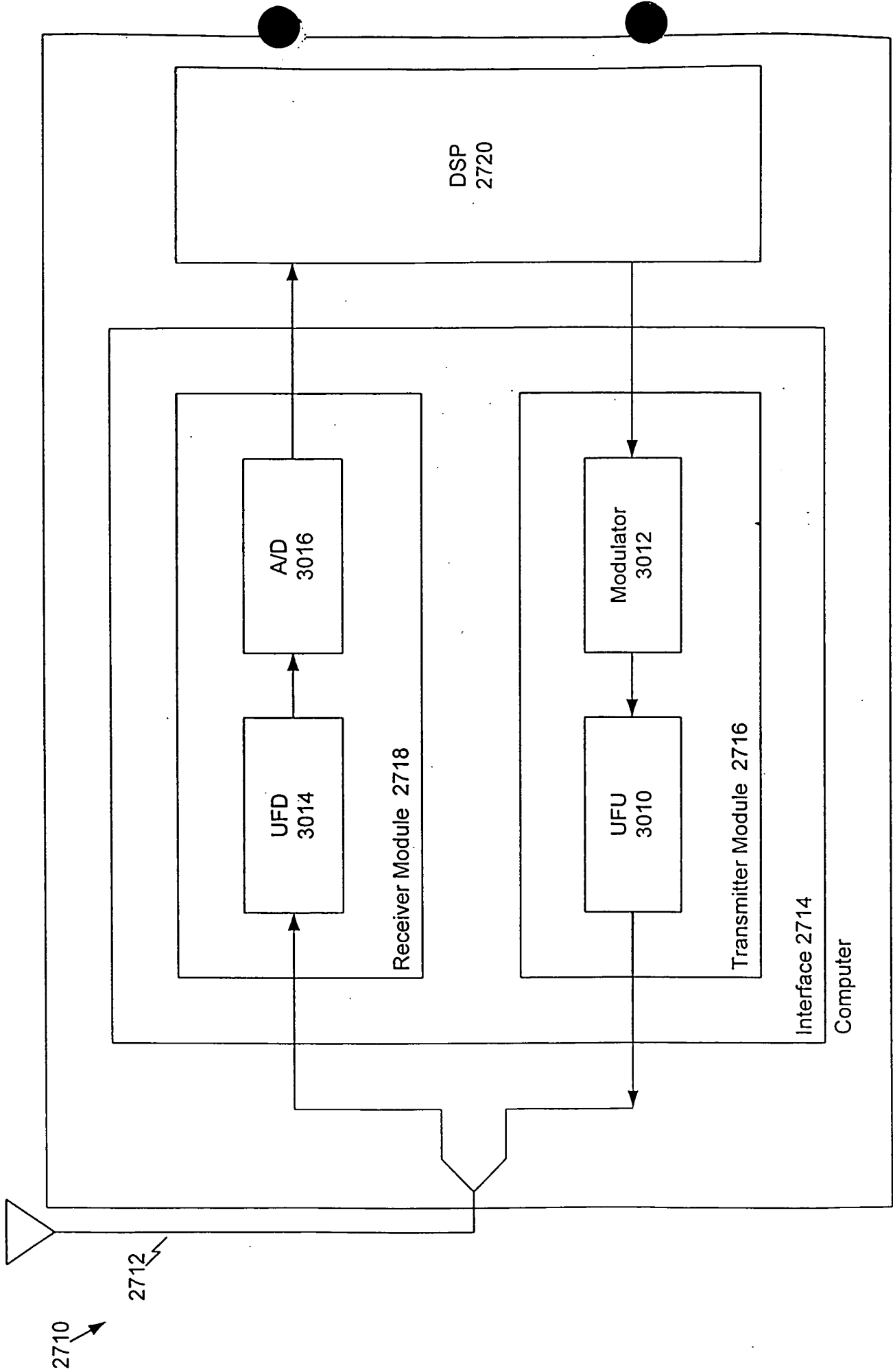


FIG. 30

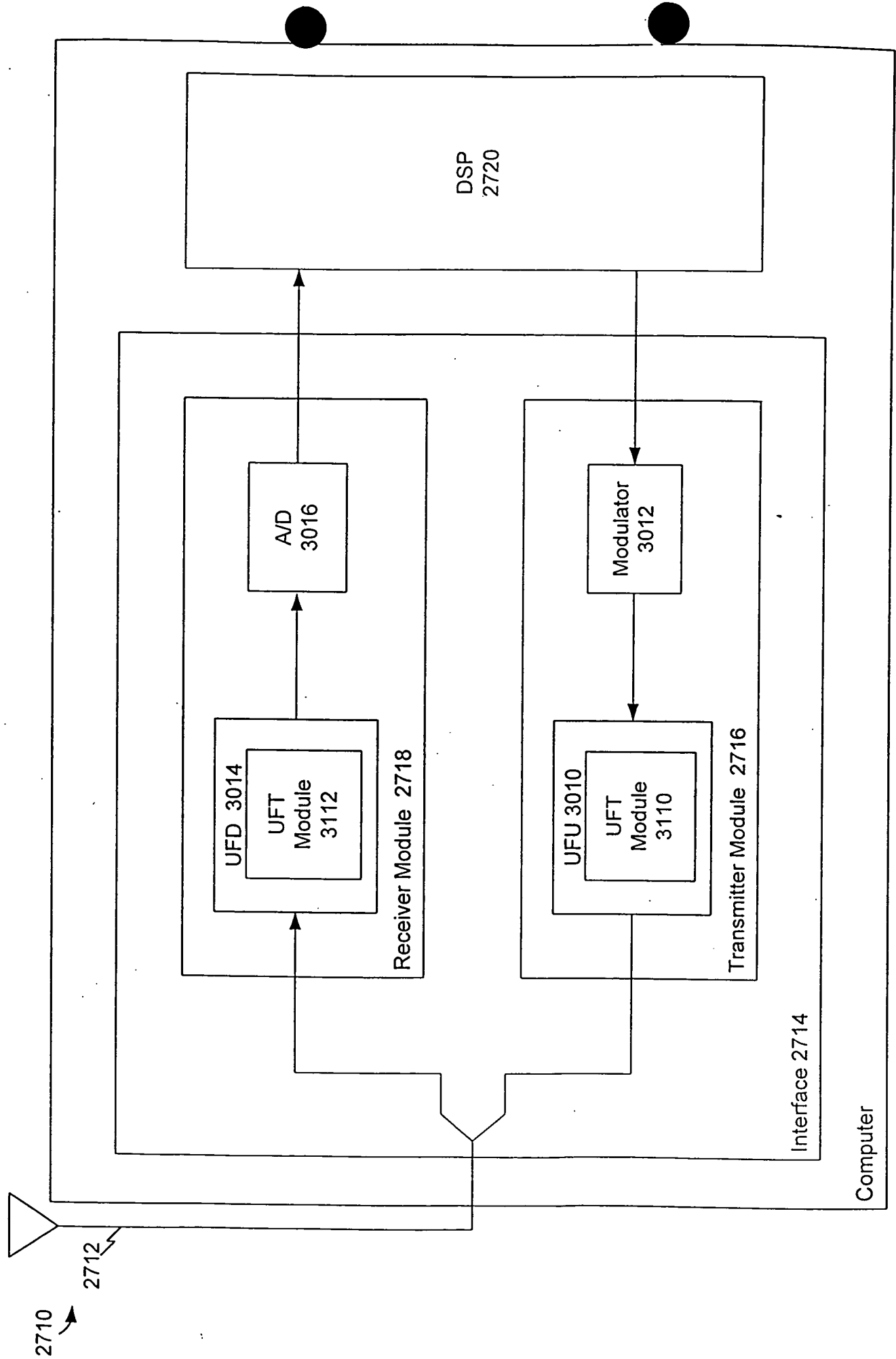


FIG. 31

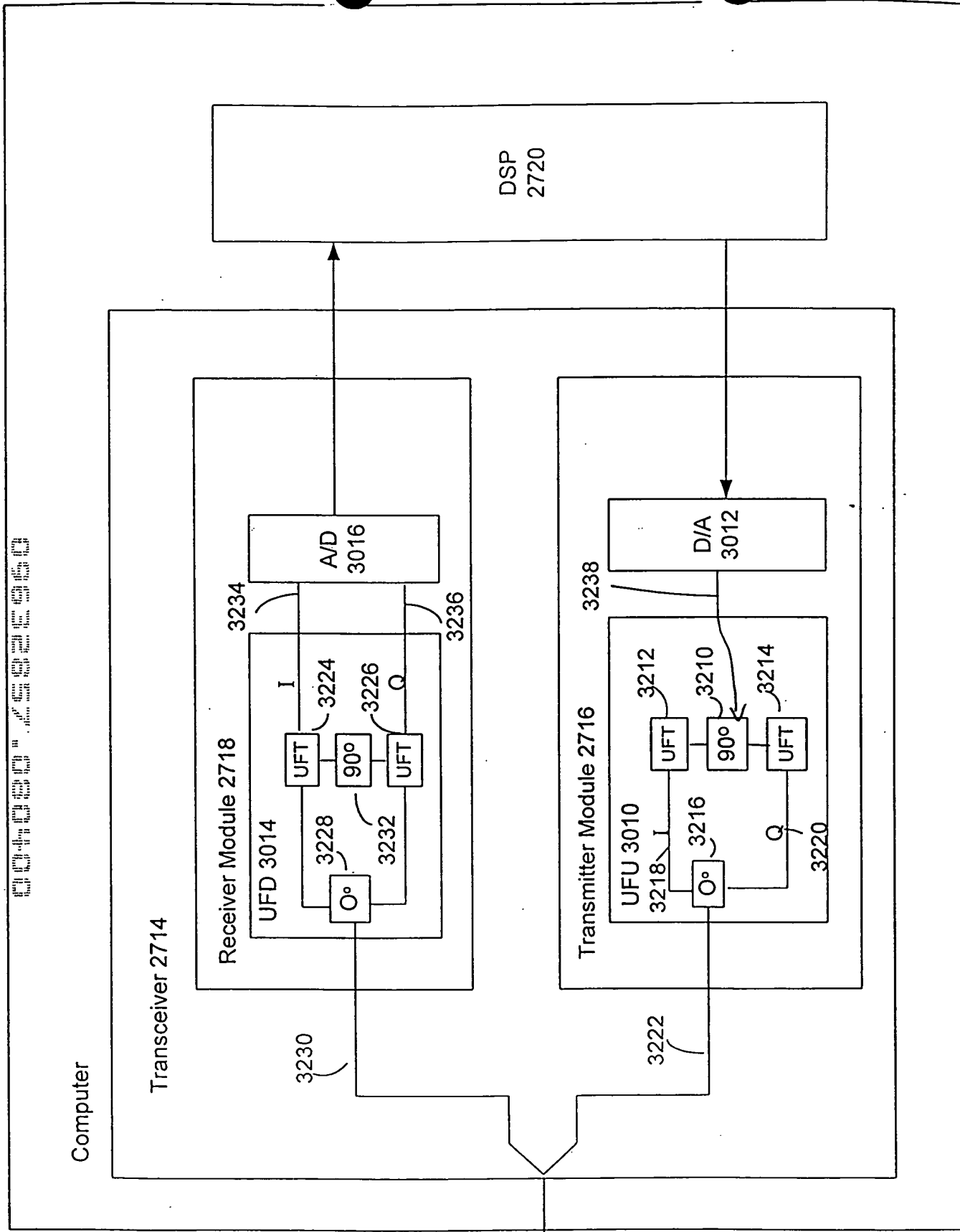


FIG. 32

004000 2682650

3302
↓

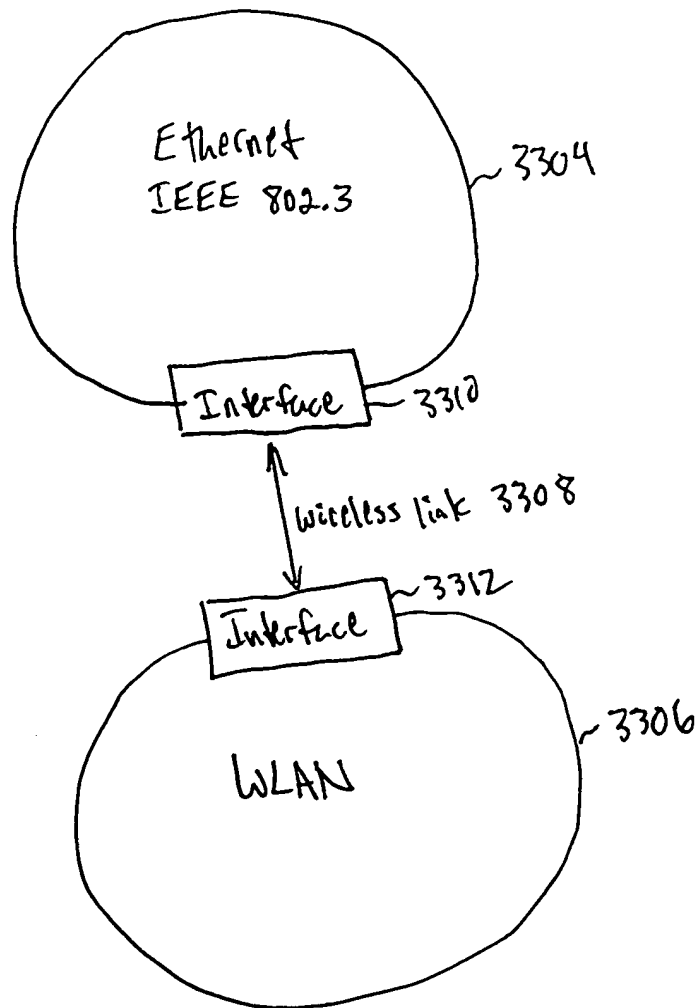


FIG. 33

3402
↓

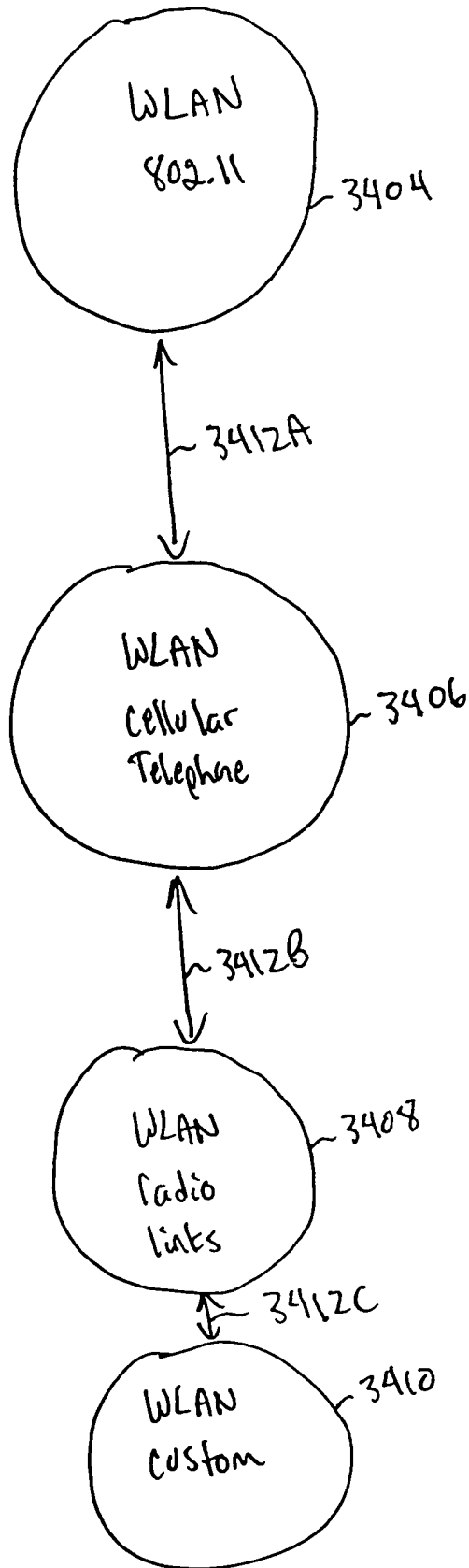
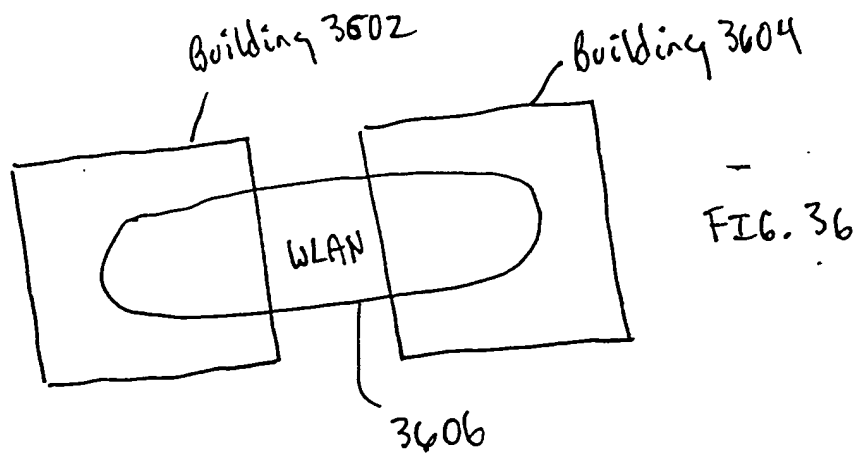
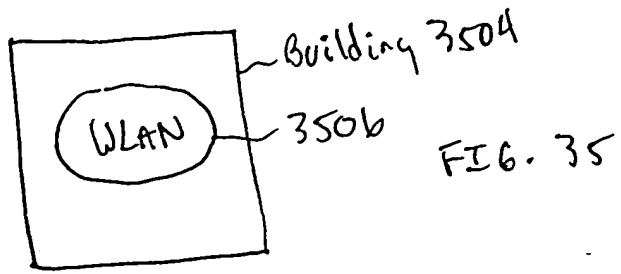


FIG. 34

3502



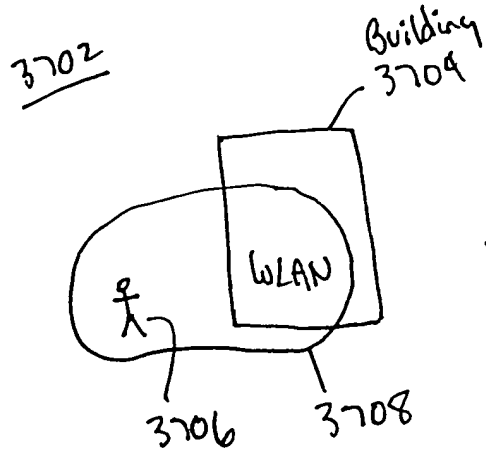


FIG. 37



FIG. 38

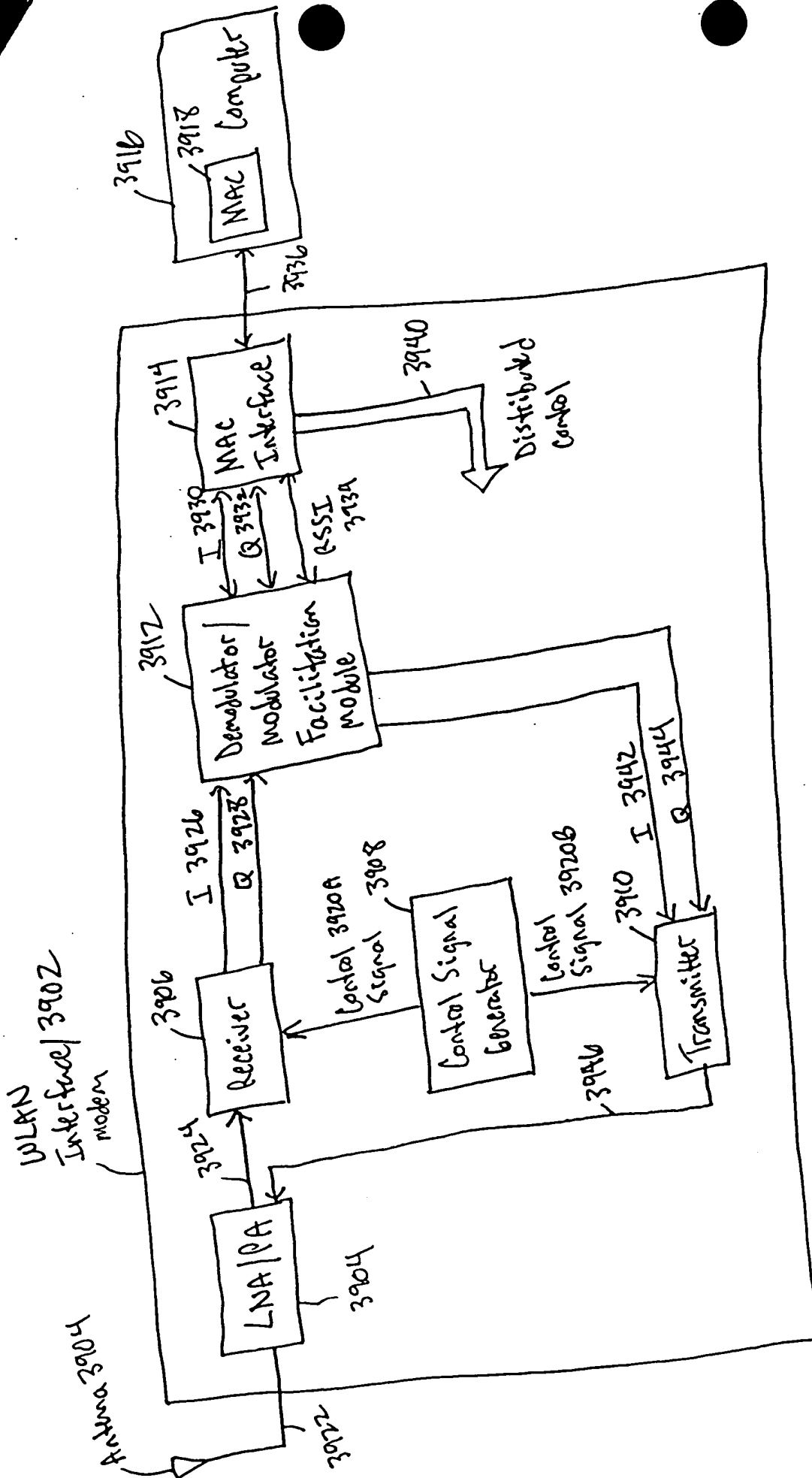


FIG. 39

004000 2532260

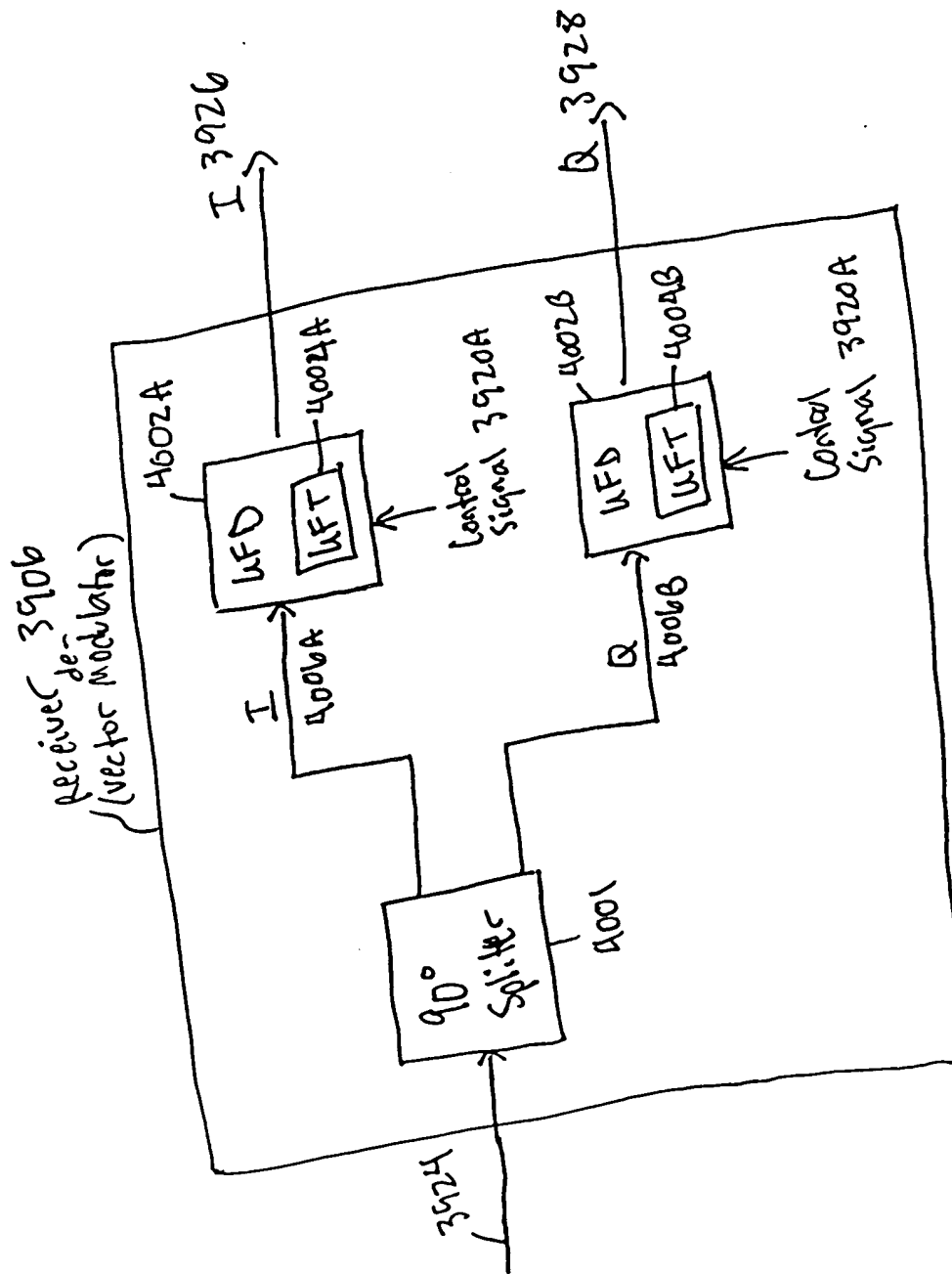


FIG. 40

vec

Transmitter 3910
(vector modulator)

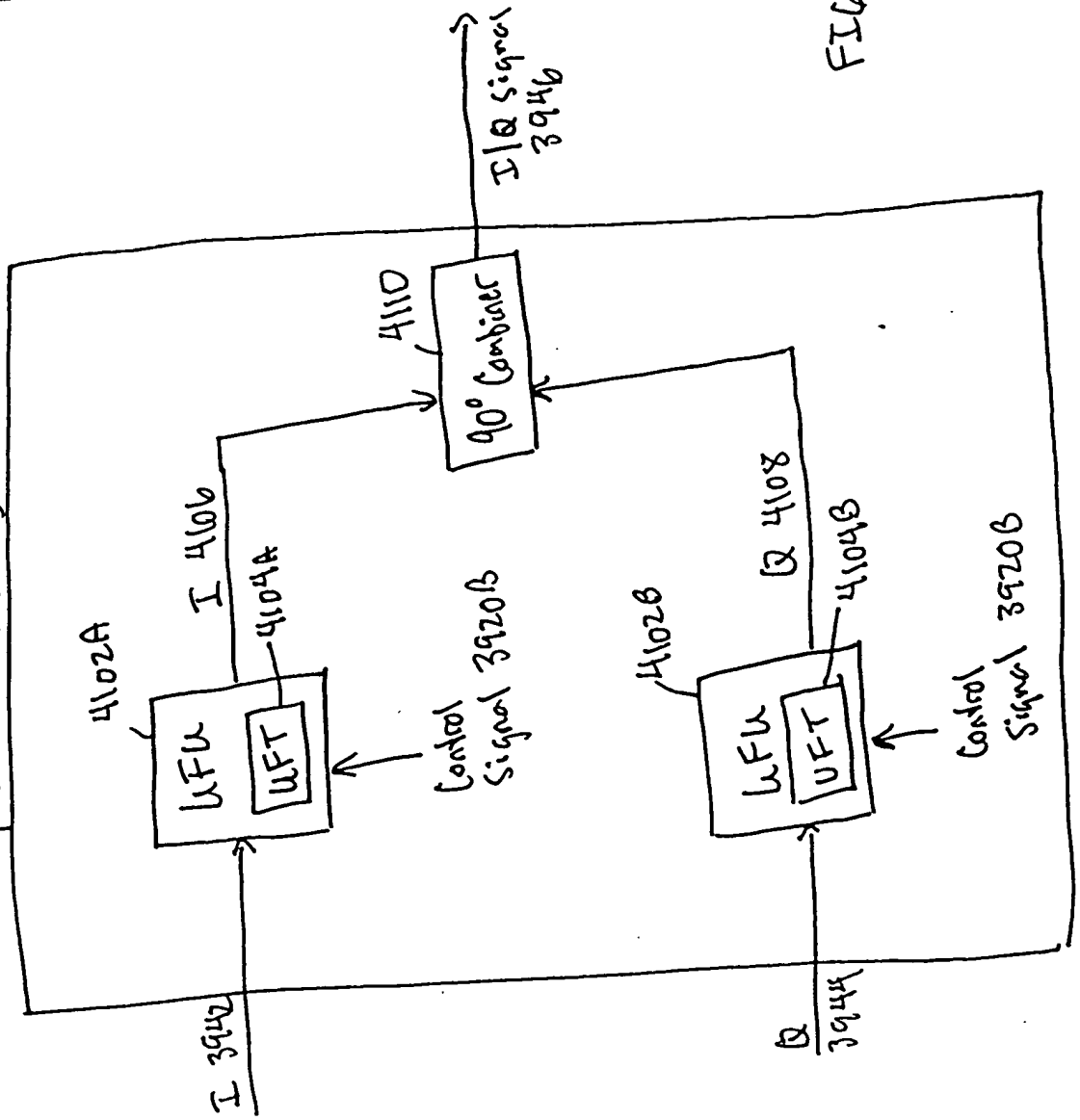
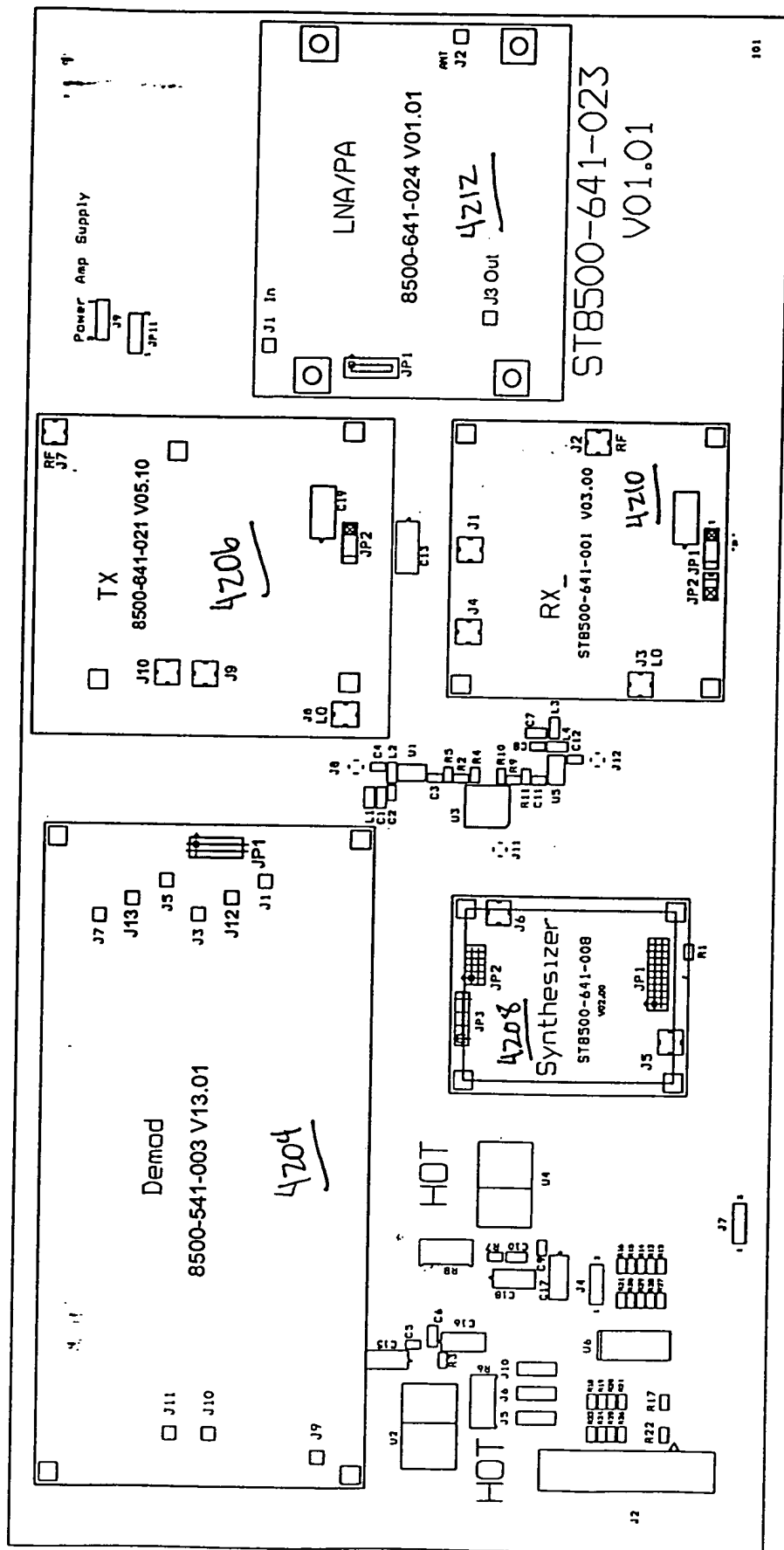


FIG. 41

004030 2322050

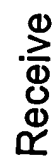
4202



T/R

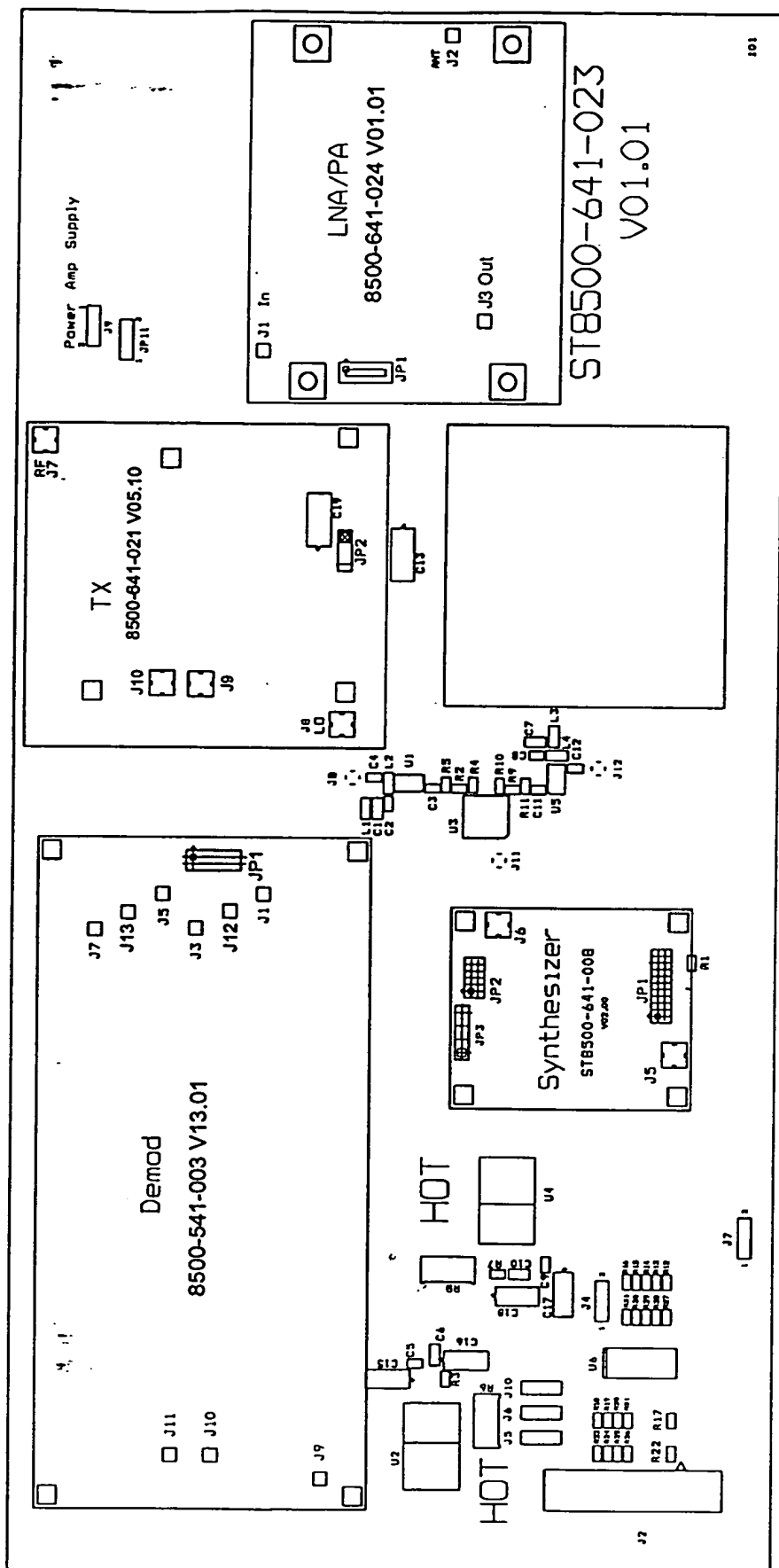
FIG. 42

2057



FI 6.43

4402



Transmit

FIG. 44

004090 2582960

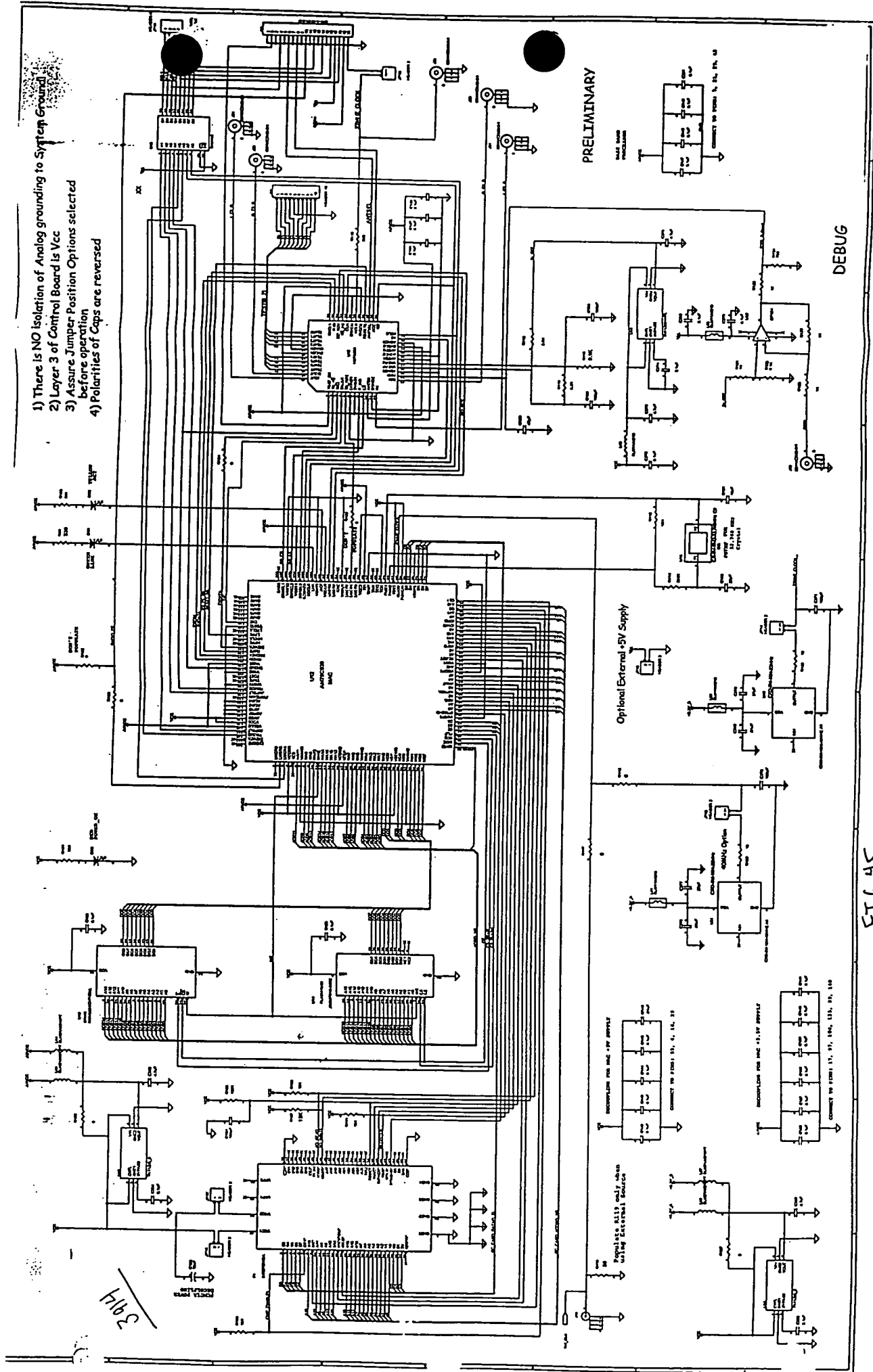


FIG. 45

PARK VISION PCMCIA CONTROLLER BOM

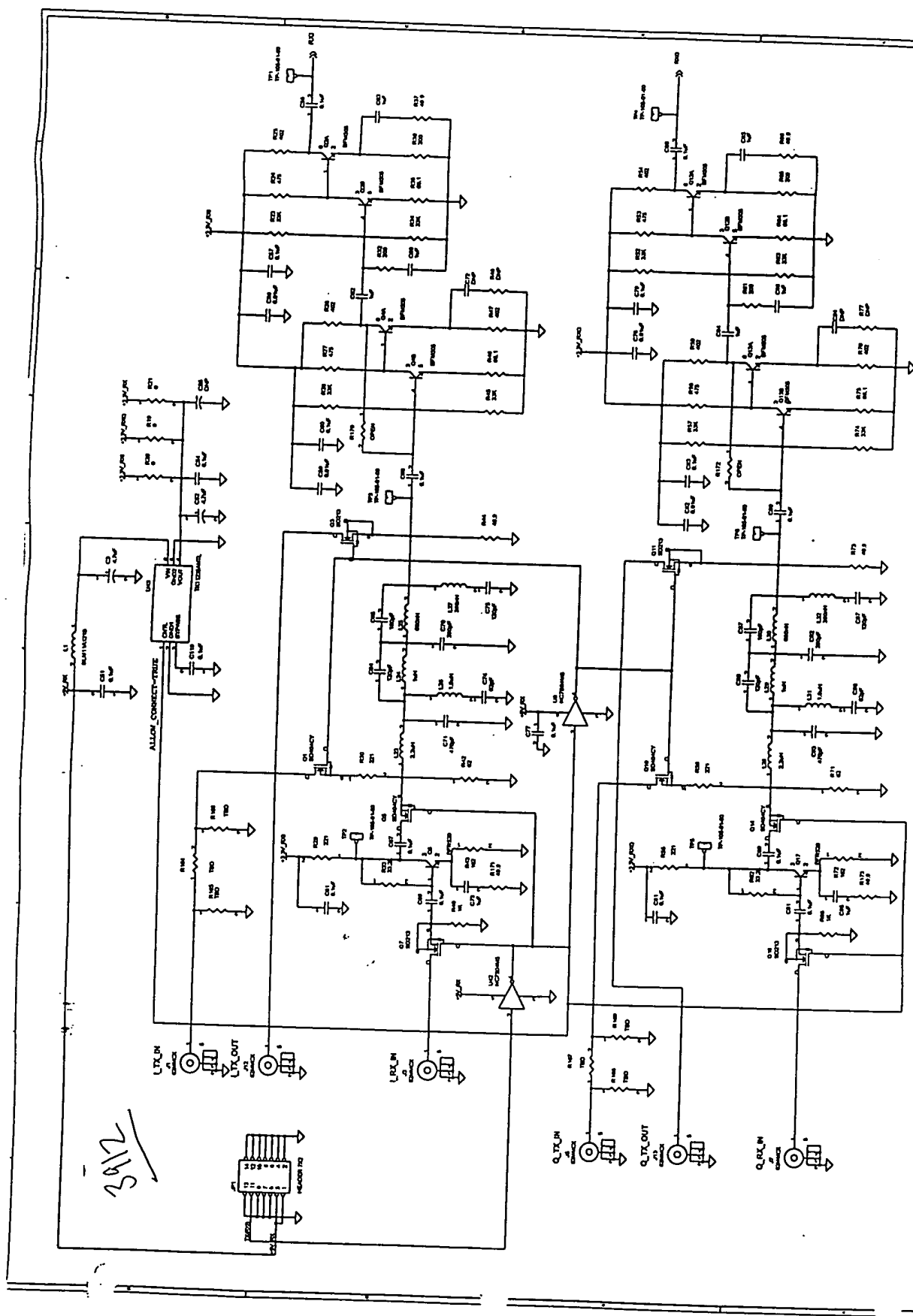
| Item | Quantity | Reference | Part Description | Part Number | Manufacturer |
|------|----------|--|--------------------------------|---------------------|-----------------------|
| 1 | 1 | C123 | 10uF CAP 6032, Tantalum,20% | TAJT106K010R | Kemet |
| 2 | 3 | C263, C273, C275, C282 | 4.7uF CAP 6032,Tantalum,20% | T491A475M006AS | Kemet |
| 3 | 25 | C120, C125, C126, C127, C128, C136, C137, C138, C139, C140, C141, C142, C143, C144, C145, C147, C148, C149, C264, C272, C274, C279, C280, C281, C283 | 0.1uF CAP 0603,X7R,10% | GRM39X7R104K050AD | Murata |
| 4 | 3 | C146, C269, C276 | .01uF CAP 0603,X7R,10% | GRM39X7R103K050AD | Murata |
| 5 | 5 | C124, C132, C133, C271, C278 | 100pF CAP 0603,X7R,10% | GRM39COG101K050AD | Murata |
| 6 | 1 | C129 | 47pF CAP 0603,X7R,10% | GRM39COG470J100AD | Murata |
| 7 | 2 | C270, C277 | 27pF CAP 0603,X7R,10% | GRM39COG270K050AD | Murata |
| 8 | 1 | C130 | 22pF CAP 0603,X7R,10% | GRM39COG220K050AD | Murata |
| 9 | 1 | C131 | 10pF CAP 0603,X7R,10% | GRM39COG100D050AD | Murata |
| 10 | 1 | DS1 | LED, Green | 597-3311-420 | Dialight |
| 11 | 1 | DS2 | LED Yellow | 597-3401-420 | Dialight |
| 12 | 1 | DS3 | LED Red | 597-3111-420 | Dialight |
| 13 | 6 | JP12, JP13, JP14, JP15, JP16, JP17 | Connector HEADER 2Pin | 2MS-19-33-01 | Specialty Electronics |
| 14 | 1 | JP11 | Connector HEADER 4Pin | 100VH/TM1SQ/W.100/4 | BLKCON |
| 15 | 7 | J16, J20, J21, J22, J23, J24, J25 | Connector 82MMCX | 82MMCX-50-0-1 | Huber/Shuner |
| 16 | 1 | J18 | Connector Header10 | TMS-110-01-G-S | samtec |
| 17 | 1 | J19 | Connector with Ejector | EHT-1-10-01-S-D | samtec |
| 18 | 1 | P1 | Connector 34X2PCMCIA | DICMJ-68S-SPC-M08 | ITT Canon |
| 19 | 7 | L59, L60, L61, L63, L64, L65, L66 | Ferrite Bead | BLM11A121S | Murata |
| 20 | 1 | R112 | 10M, Resistor, 0603, 5% | ERJ-3GSYJ394V | Panasonic |
| 21 | 1 | R114 | 390K, Resistor, 0603, 5% | ERJ-3GSYJ104V | Panasonic |
| 22 | 1 | R105 | 100K, Resistor, 0603, 5% | ERJ-3GSYJ153V | Panasonic |
| 23 | 4 | R106, R107, R108, R111 | 15K, Resistor, 0603, 5% | ERJ-3GSYJ912V | Panasonic |
| 24 | 1 | R116 | 9.1K, Resistor, 0603, 5% | ERJ-3GSYJ822V | Panasonic |
| 25 | 1 | R115 | 8.2K, Resistor, 0603, 5% | ERJ-3GSYJ392V | Panasonic |
| 26 | 1 | R113 | 3.9K, Resistor, 0603, 5% | ERJ-3GSYJ751V | Panasonic |
| 27 | 1 | R101 | 750, Resistor, 0603, 5% | ERJ-3GSYJ561V | Panasonic |
| 28 | 1 | R110 | 560, Resistor, 0603, 5% | ERJ-3GSYJ331V | Panasonic |
| 29 | 1 | R99, R100 | 330, Resistor, 0603, 5% | | |
| 30 | 2 | | | | |

FIG. 46A

| | | | | | |
|----|---|--|-------------------------|-------------------------|------------|
| 31 | 1 | R119 | 50, Resistor, 0603, 5% | ERJ-3GSYJ500V | Panasonic |
| 32 | 2 | R128, R129 | 10, Resistor, 0603, 5% | ERJ-3GSYJ100V | Panasonic |
| 33 | 8 | R102, R103, R104, R109, R117, R118, R120, R127 | 0, Resistor, 0603, 5% | RM732Z1J000ZT | ERJ-KOA |
| 34 | 6 | R121, R122, R123, R124, R125, R126 | TBD, Resistor, 0603, 5% | 3GSYJ000V | Panasonic |
| 35 | 1 | U10 | SRAM | R | Panasonic |
| 36 | 1 | U12 | MAC | KM62256DLTG-5L | Samsung |
| 37 | 1 | U13 | Baseband Processor | M5M5256CVP-55LL | Mitsubishi |
| 38 | 1 | U14 | FLASH RAM | AM79C930 | AMD |
| 39 | 1 | U15 | 32 KHz Crystal | HFA3842 A1 | Harris |
| 40 | 2 | U45 | Bus Buffer | AM29F010-55EC | AMD |
| 41 | 1 | U48 | Regulator 3.5 V | CX-6V-SM2-32.768KHz C/I | Statek |
| 42 | 1 | U49 | 22MHz Oscillator | DS3862 | National |
| 43 | 1 | U50 | 2 Volt Reference | TK11235BMC | TOKO |
| 44 | 1 | U51 | 40MHz Oscillator | FOX F3346-22MHz | FOX |
| | | | | TK11220BMC | TOKO |
| | | | | CXO-M-10N-40MHz A/I | Statek |

FIG. 46B

3912



004030-2582650

3012

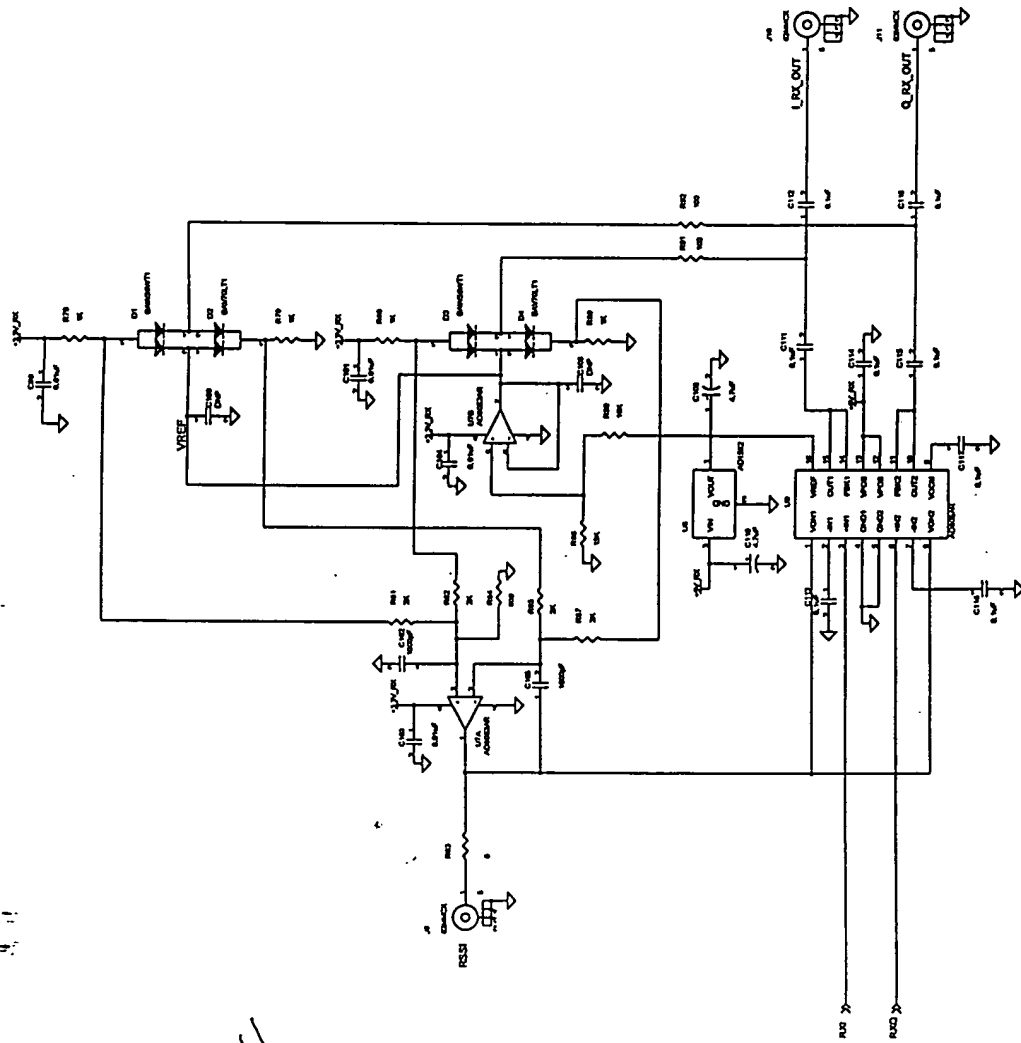


FIG. 48

July : Page1

| Item | Quantity | Reference | Part | Part Number | Manufacturer |
|------|----------|--|------------|-----------------|--------------|
| 1 | 4 | C3,C52,C108,C110 | 4.7uF | T491A475K006AS | KEMET |
| 2 | 26 | C51,C54,C57,C58,C60,C61, C67,C68,C69,C77,C79,C80, C81,C83,C89,C90,C91,C111, C112,C113,C114,C115,C116, C117,C118,C119 | 0.1uF | GRM39Y5V104Z016 | Murata |
| 3 | 1 | C55 | DNP | T491A475K006AS | KEMET |
| 4 | 8 | C56,C59,C78,C82,C99,C101, C103,C104 | 0.01uF | GRM39X7R103K050 | Murata |
| 5 | 8 | C62,C63,C66,C73,C84,C85, C88,C95 | 1uF | GRM40Y5V105Z016 | Murata |
| 6 | 4 | C64,C75,C86,C97 | 120pF | GRM39COG121J050 | Murata |
| 7 | 2 | C65,C87 | 180pF | GRM39COG181J050 | Murata |
| 8 | 2 | C70,C92 | 390pF | GRM39COG391J050 | Murata |
| 9 | 2 | C71,C93 | 470pF | GRM39COG471J050 | Murata |
| 10 | 2 | C72,C94 | DNP | GRM40Y5V105Z016 | Murata |
| 11 | 2 | C74,C96 | 82pF | GRM39COG820J050 | Murata |
| 12 | 2 | C100,C106 | DNP | DNP | Murata |
| 13 | 2 | C105,C102 | 1000pF | GRM39COG102K050 | Murata |
| 14 | 2 | D3,D1 | BAW56WT1 | BAW56WT1 | Motorola |
| 15 | 2 | D4,D2 | BAV70LT1 | BAV70LT1 | Motorola |
| 16 | 1 | JP1 | HEADER 7X2 | FTSH-107-02-L-D | Samtec |
| 17 | 9 | J1,J3,J5,J7,J9,J10,J11, J12,J13 | 82MMCX | 82MMCX-50-0-1 | Suhner |
| 18 | 1 | L1 | BLM11A121S | BLM11A121S | Murata |
| 19 | 2 | L23,L28 | 2.2uH | LQG21N2R2K10 | Murata |
| 20 | 2 | L29,L24 | 1uH | LQG21N1R0K10 | Murata |
| 21 | 2 | L30,L25 | 680nH | LQG21NR68K10 | Murata |
| 22 | 2 | L26,L31 | 1.8uH | LQG21N1R8K10 | Murata |
| 23 | 2 | L32,L27 | 390nH | LQG21NR39K10 | Murata |
| 24 | 4 | Q1,Q5,Q10,Q14 | SD404CY | SD404CY | Calogic |
| 25 | 4 | Q2,Q4,Q12,Q13 | BFM505 | BFM505 | Philips |
| 26 | 4 | Q3,Q7,Q11,Q16 | SD213 | SD213 | Calogic |
| 27 | 2 | Q17,Q8 | BFR520 | BFR520 | Philips |
| 28 | 4 | R19,R20,R21,R83 | 0 | ERJ3GSY0R00 | Panasonic |
| 29 | 8 | R23,R26,R34,R45,R52,R57, R63,R74 | 33K | ERJ3GSYJ333 | Panasonic |
| 30 | 4 | R24,R27,R53,R58 | 475 | ERJ3EKF4750 | Panasonic |
| 31 | 6 | R25,R28,R47,R54,R59,R76 | 402 | ERJ3EKF4020 | Panasonic |
| 32 | 4 | R29,R30,R55,R56 | 221 | ERJ3EKF2210 | Panasonic |
| 33 | 2 | R32,R61 | 200 | ERJ3GSYJ201 | Panasonic |
| 34 | 2 | R33,R62 | 33.2K | ERJ3GSYJ333 | Panasonic |
| | 4 | R35,R46,R64,R75 | 68.1 | ERJ3EKF68R1 | Panasonic |

FIG. 49A

| | | | | | |
|----|---|---------------------------|--------------|-------------|------------------------|
| 36 | 2 | R36,R65 | 200 | ERJ3EKF2000 | Panasonic |
| 7 | 6 | R37,R44,R66,R73,R171, | 49.9 | ERJ3EKF49R9 | Panasonic |
| | | R173 | | | |
| 38 | 6 | R40,R68,R78,R79,R80,R89 | 1K | ERJ3EKF1001 | Panasonic |
| 39 | 2 | R42,R71 | 62 | ERJ3GSYJ620 | Panasonic |
| 40 | 2 | R43,R72 | 162 | ERJ3EKF1620 | Panasonic |
| 41 | 2 | R77,R48 | DNP | ERJ3GSYJ330 | Panasonic |
| 42 | 4 | R81,R82,R85,R87 | 2K | ERJ3EKF2001 | Panasonic |
| 43 | 1 | R84 | 909 | ERJ3EKF9090 | Panasonic |
| 44 | 1 | R88 | 15K | ERJ3EKF1502 | Panasonic |
| 45 | 1 | R90 | 10K | ERJ3EKF1002 | Panasonic |
| 46 | 2 | R91,R92 | 100 | ERJ3EKF1000 | Panasonic |
| 47 | 6 | R164,R165,R166,R167,R168, | TBD | | Panasonic |
| | | R169 | | | |
| 48 | 2 | R170,R172 | OPEN | | Panasonic |
| 49 | 6 | TP1,TP2,TP3,TP4,TP5,TP6 | TP-105-01-00 | | |
| 50 | 2 | U42,U6 | NC7S04M5 | NC7S04M5 | National Semiconductor |
| 51 | 1 | U7 | AD8052AR | AD8052AR | Analog Devices |
| 52 | 1 | U8 | AD1582 | AD1582 | Analog Devices |
| 53 | 1 | U9 | AD605AR | AD605AR | Analog Devices |
| 54 | 1 | U43 | TK11235AMTL | TK11235BM | Toko |

55

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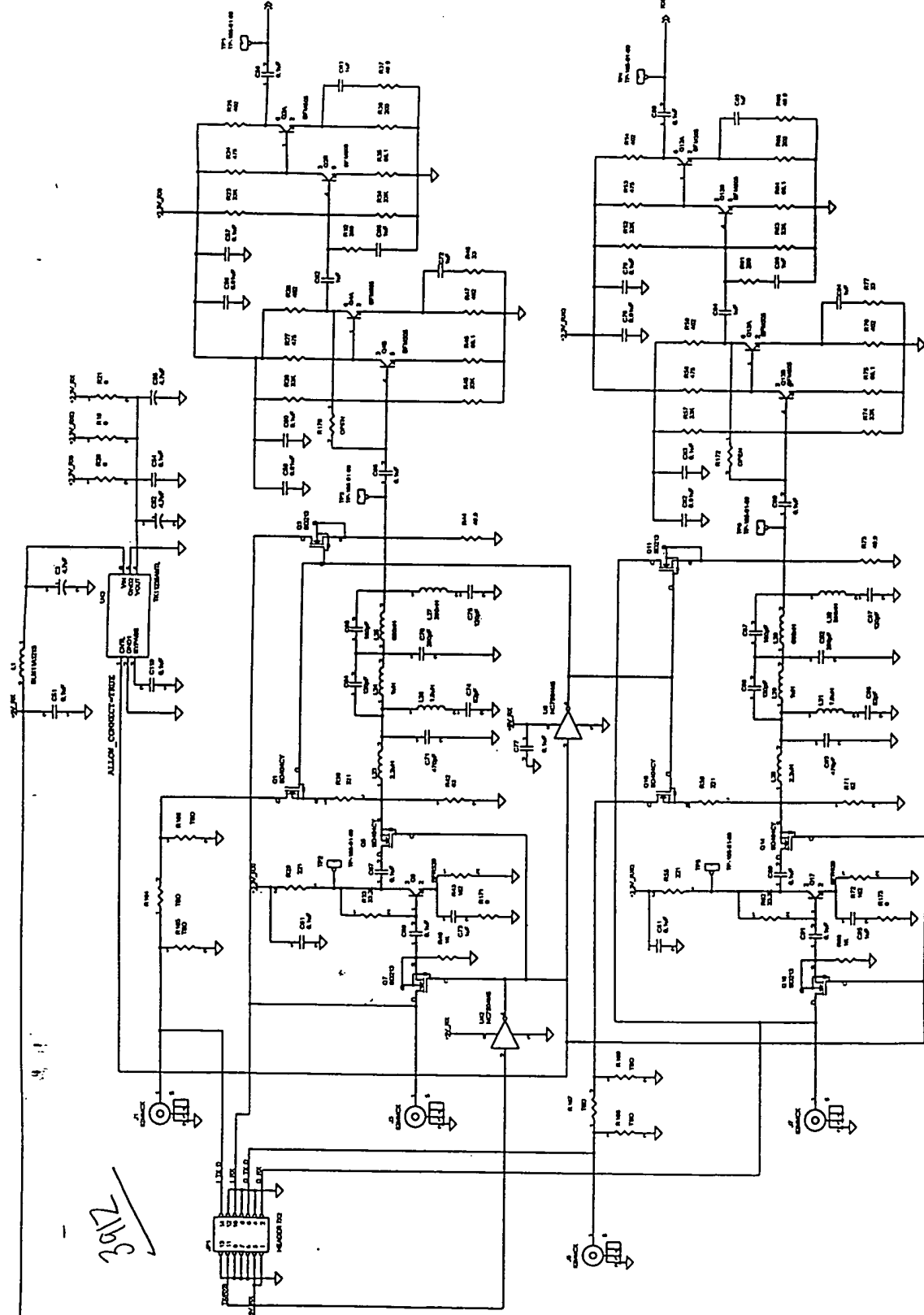
BOARD

8500.541.003 V13.01

FIG. 49B

004030-2532260

7/19/2



0044000 25822060

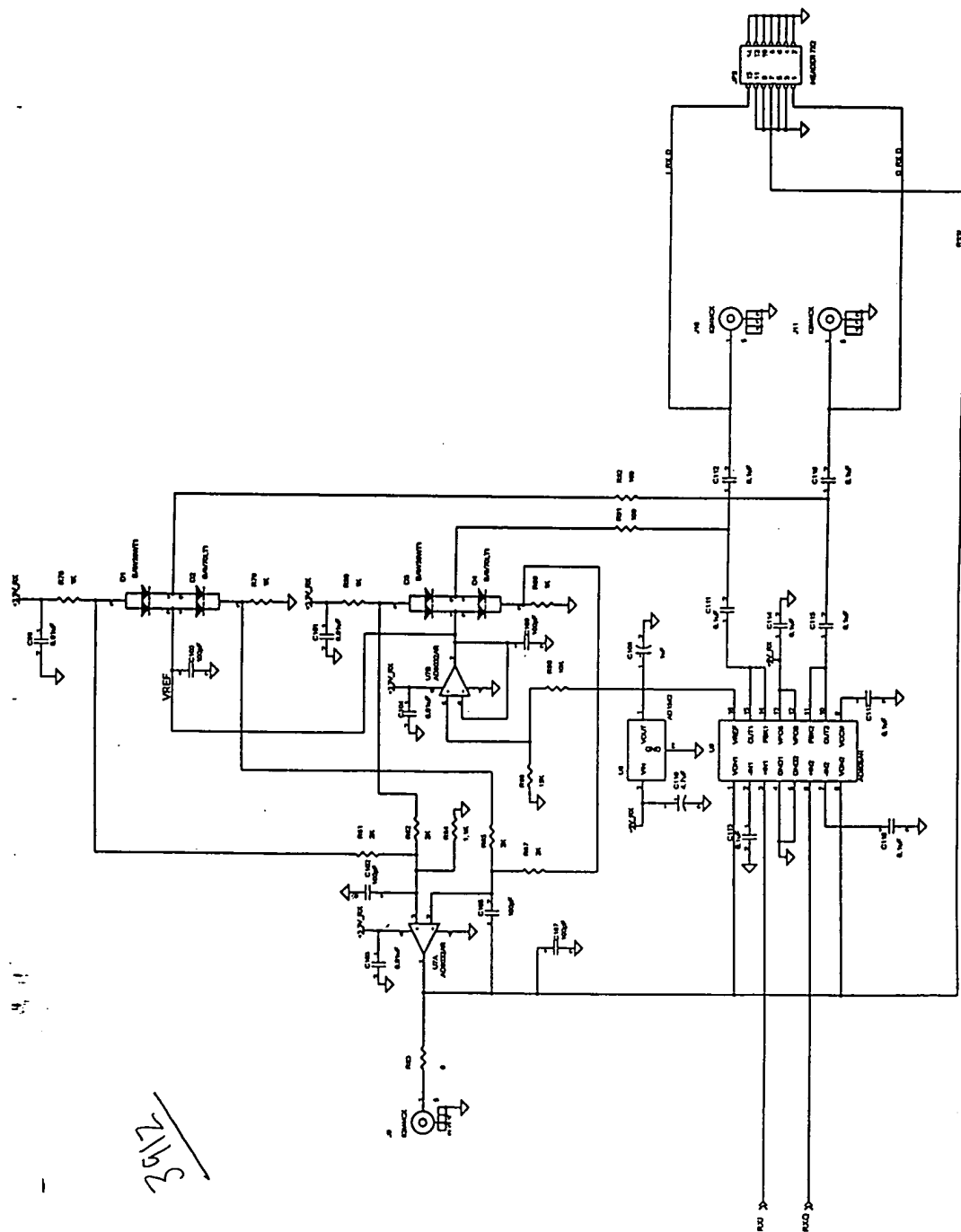


FIG. 51

Bill Of Materials

| Item | Quantity | Reference | Part | Part Number | Manufacturer |
|------|----------|--|------------|-----------------|--------------|
| 1 | 3 | C3,C52,C55 | 4.7uF | T491A475K006AS | KEMET |
| 2 | 26 | C51,C54,C57,C58,C60,C61, C67,C68,C69,C77,C79,C80, C81,C83,C89,C90,C91,C111, C112,C113,C114,C115,C116, C117,C118,C119 | 0.1uF | GRM39Y5V104Z016 | Murata |
| 3 | 8 | C56,C59,C78,C82,C99,C101, C103,C104 | 0.01uF | GRM39X7R103K050 | Murata |
| 4 | 10 | C62,C63,C66,C72,C73,C84, C85,C88,C94,C95 | 1uF | GRM40Y5V105Z016 | Murata |
| 5 | 4 | C64,C75,C86,C97 | 120pF | GRM39COG121J050 | Murata |
| 6 | 2 | C87,C65 | 180pF | GRM39COG181J050 | Murata |
| 7 | 2 | C70,C92 | 390pF | GRM39COG391J050 | Murata |
| 8 | 2 | C71,C93 | 470pF | GRM39COG471J050 | Murata |
| 9 | 2 | C96,C74 | 82pF | GRM39COG820J050 | Murata |
| 10 | 5 | C100,C102,C105,C106,C107 | 100pF | GRM39COG101K050 | Murata |
| 11 | 1 | C108 | 1uF | | |
| 12 | 1 | C110 | 4.7uF | | |
| 13 | 2 | D3,D1 | BAW56WT1 | BAW56WT1 | Motorola |
| 14 | 2 | D4,D2 | BAV70LT1 | BAV70LT1 | Motorola |
| 15 | 2 | JP2,JP1 | HEADER 7X2 | | |
| 16 | 6 | J1,J3,J5,J7,J10,J11 | 82MMCX | 142-0701-231 | Johnson |
| 17 | 1 | J9 | 82MMCX | 82MMCX-50-0-1 | Suhner |
| 18 | 1 | L1 | BLM11A121S | BLM11A121S | Murata |
| 19 | 2 | L28,L23 | 2.2uH | LQG21N2R2K10 | Murata |
| 20 | 2 | L24,L29 | 1uH | LQG21N1R0K10 | Murata |
| 21 | 2 | L30,L25 | 680nH | LQG21NR68K10 | Murata |
| 22 | 2 | L26,L31 | 1.8uH | LQG21N1R8K10 | Murata |
| 23 | 2 | L27,L32 | 390nH | LQG21NR39K10 | Murata |
| 24 | 4 | Q1,Q5,Q10,Q14 | SD404CY | SD404CY | Calogic |
| 25 | 4 | Q2,Q4,Q12,Q13 | BFM505 | BFM505 | Philips |
| 26 | 4 | Q3,Q7,Q11,Q16 | SD213 | SD213 | Calogic |
| 27 | 2 | Q17,Q8 | BFR520 | BFR505 | Philips |
| 28 | 5 | R19,R20,R21,R171,R173 | 0 | | |
| 29 | 8 | R23,R26,R34,R45,R52,R57, R63,R74 | 33K | ERJ3GSYJ333 | Panasonic |
| 30 | 4 | R24,R27,R53,R58 | 475 | ERJ3EKF4750 | Panasonic |
| 31 | 6 | R25,R28,R47,R54,R59,R76 | 402 | ERJ3EKF4020 | Panasonic |
| 32 | 4 | R29,R30,R55,R56 | 221 | ERJ3EKF2210 | Panasonic |
| 33 | 2 | R32,R61 | 200 | ERJ3GSYJ201 | Panasonic |
| 34 | 2 | R33,R62 | 33.2K | ERJ3GSYJ333 | Panasonic |
| | 4 | R35,R46,R64,R75 | 68.1 | ERJ3EKF68R1 | Panasonic |
| | 2 | R36,R65 | 200 | ERJ3EKF2000 | Panasonic |

FIG. 52A

| | | | | | |
|----|---|-----------------------------------|--------------|-------------|------------------------|
| 37 | 2 | R66,R37 | 49.9 | ERJ3EKF49R9 | Panasonic |
| 8 | 6 | R40,R68,R78,R79,R80,R89 | 1K | ERJ3EKF1001 | Panasonic |
| 39 | 2 | R42,R71 | 62 | ERJ3GSYJ620 | Panasonic |
| 40 | 2 | R43,R72 | 162 | ERJ3EKF6810 | Panasonic |
| 41 | 2 | R44,R73 | 49.9 | ERJ3EKF1001 | Panasonic |
| 42 | 2 | R77,R48 | 33 | ERJ3GSYJ330 | Panasonic |
| 43 | 4 | R81,R82,R85,R87 | 2K | ERJ3EKF2001 | Panasonic |
| 44 | 1 | R83 | 0 | ERJGSY0R00 | Panasonic |
| 45 | 1 | R84 | 1.1K | ERJ3EKF2001 | Panasonic |
| 46 | 1 | R88 | 15K | ERJ3EKF1502 | Panasonic |
| 47 | 1 | R90 | 10K | ERJ3EKF1002 | Panasonic |
| 48 | 2 | R91,R92 | 100 | ERJ3EKF1000 | Panasonic |
| 49 | 6 | R164,R165,R166,R167,R168, R169 | TBD | | |
| 50 | 2 | R170,R172 | OPEN | | |
| 51 | 6 | TP1,TP2,TP3,TP4,TP5,TP6 | TP-105-01-00 | | |
| 52 | 2 | U42,U6 | NC7S04M5 | | National Semiconductor |
| 53 | 1 | U7 | AD8032AR | AD8032AR | Analog Devices |
| 54 | 1 | U8 | AD1582 | AD1582 | Analog Devices |
| 55 | 1 | U9 | AD605AR | AD605AR | Analog Devices |
| 56 | 1 | U43 | TK11235AMTL | TK11235AMTL | Toko |

FIG. 52B

[illegible]

FIG. 53

| Item | Quantity | Reference | Part | Part Number | Manufacturer |
|------|----------|--|---------------|-----------------|----------------|
| 1 | 10 | C/R7,C/R15,C16,C17,C18, C19,C21,C22,C23,C24 | 0.1uF | GRM39Y5V104Z016 | Murata |
| 2 | 6 | C1,C3,C6,C8,C9,C12 | 22pF | GRM39COG220J050 | Murata |
| 3 | 3 | C2,C4,C11 | 0.1uF | GRM39X7R104K016 | Murata |
| 4 | 2 | C5,C15 | 47pF | GRM39COG470J050 | Murata |
| 5 | 2 | C10,C7 | 1000pF | GRM39X7R102K050 | Murata |
| 6 | 1 | C13 | 100pF | GRM39X7R101J050 | Murata |
| 7 | 1 | C14 | 3pF | GRM40COG030B50V | Murata |
| 8 | 2 | C20,C25 | 1uF | GRM40Y5V105Z016 | Murata |
| 9 | 1 | JP1 | 69190-403 | 69190-403 | BERG |
| 10 | 1 | JP2 | 69190-402 | 69190-402 | BERG |
| 11 | 4 | J1,J2,J3,J4 | 82MMCX-50-0-1 | 82MMCX-50-0-1 | Suhner |
| 12 | 2 | L3,L1 | DNP | L | TOKO |
| 13 | 2 | L4,L2 | 4.7nH | LL1608-F4N7K | TOKO |
| 14 | 1 | L5 | 15nH | LL2012FH15NJ | TOKO |
| 15 | 1 | L6 | DNP | DNP | TOKO |
| 16 | 2 | Q1,Q2 | BFR520 | BFR520 | Philips |
| 17 | 2 | R1,R3 | 2K | ERJ3GSYJ202 | Panasonic |
| 18 | 1 | R2 | 51 | ERJ3GSYJ510 | Panasonic |
| 19 | 2 | R4,R12 | 221 | ERJ3EKF2210 | Panasonic |
| 20 | 6 | R5,R6,R8,R13,R14,R16 | 33.2K | ERJ3EKF3322 | Panasonic |
| 21 | 2 | R9,R17 | DNP | ERJ3EKF1001 | Panasonic |
| 22 | 2 | R10,R18 | 249 | ERJ3EKF2490 | Panasonic |
| 23 | 2 | R11,R19 | 10 | ERJ3GSYJ100 | Panasonic |
| 24 | 1 | U1 | D2D_V4 | D2D_V4 | Parker Vision |
| 25 | 1 | U2 | 1X603 | 1X603 | Anaren |
| 26 | 1 | U3 | AD8032AR | AD8032AR | Analog Devices |

27 1

Base D ST8500-6A1.001 V03.00

FIG. 54

0044000-030400

3908

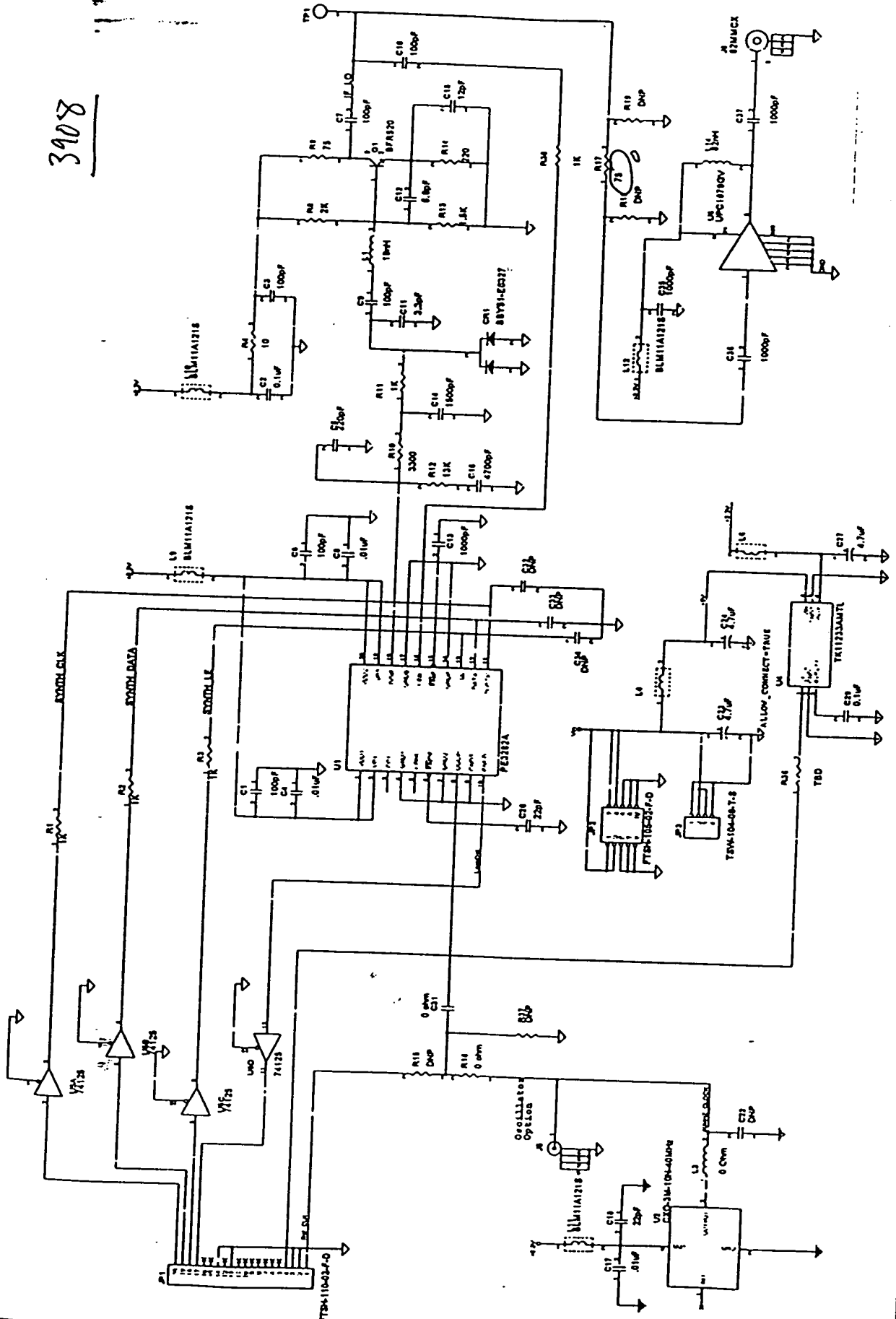


FIG. 55

| Synthesizer | | ST8500-532-008 V02.00 | | Revision: B | |
|-------------------|-----|-----------------------|-----------------|---|--------------|
| Bill Of Materials | | | | | |
| Item | Qty | Reference | Part | Description | Manufacturer |
| 1 | 1 | CR1 | BBY51-E6327 | Diode, Varactor | Siemens |
| 2 | 6 | C1,C3,C5,C7,C9,C10 | 100pF | Capacitor, ceramic, 100pF, 10%, COG, 0603 | Murata |
| 3 | 2 | C29,C2 | 0.1uF | Capacitor, ceramic, .1uF, 10%, X7R, 0603 | Murata |
| 4 | 3 | C4,C8,C17 | .01uF | Capacitor, ceramic, .01uF, 10%, X7R, 0603 | Murata |
| 5 | 1 | C6 | 220pF | Capacitor, ceramic, 220pF, 5%, COG, 0603 | Murata |
| 6 | 1 | C11 | 3.3pF | Capacitor, ceramic, 3.3pF, 5%, COG, 0603 | Murata |
| 7 | 1 | C12 | 6.8pF | Capacitor, ceramic, 6.8pF, +/-25pF, COG, 0603 | Murata |
| 8 | 4 | C13,C35,C36,C37 | 1000pF | Capacitor, ceramic, 1000pF, 10%, X7R, 0603 | Murata |
| 9 | 1 | C14 | 1500pF | Capacitor, ceramic, 1500pF, 10%, X7R, 0603 | Murata |
| 10 | 1 | C15 | 12pF | Capacitor, ceramic, 12pF, 5%, COG, 0603 | Murata |
| 11 | 1 | C16 | 4700pF | Capacitor, ceramic, 4700pF, 10%, COG, 0603 | Murata |
| 12 | 2 | C20,C18 | 22pF | Capacitor, ceramic, 22pF, 10%, COG, 0603 | Murata |
| 13 | 4 | C22,C32,C33,C34 | DNP | Capacitor, ceramic, . . . 0603 | Murata |
| 14 | 3 | C23,C24,C27 | 4.7uF | Capacitor, tantalum, 4.7uF, 10%, 3216 | Murata |
| 15 | 2 | R16,C31, R17 | 0 ohm | Resistor, zero ohm, 0603 | Kemet |
| 16 | 1 | JP1 | FTSH-110-02-F-D | Header, dual row 10x2, .050x.050 | Panasonic |
| 17 | 1 | JP2 | FTSH-105-02-F-D | Header, dual row 5x2, .050x.050 | Samtec |
| 18 | 1 | JP3 | TSW-104-08-T-S | Header, single row 4 pin, .100" | Samtec |
| 19 | 2 | J5,J6 | 82MMCX | RF Connector | Berg |
| 20 | 1 | L1 | 18nH | Inductor, 18nH, 10%, 0805 | Suhner |
| 21 | 1 | L3 | 0 Ohm | Zero Ohm Jumper | Coilcraft |
| 22 | 6 | L4,L6,L9,L10,L11,L12 | BLM11A121S | Ferrite Bead, 0603 | KOA |
| 23 | 1 | L14 | 82nH | Inductor, 82nH, 10%, 0805 | Murata |
| 24 | 1 | Q1 | BFR520 | Transistor, NPN | Toko |
| 25 | 5 | R1,R2,R3,R11,R30 | 1K | Resistor, 1K, 5%, 0603 | Philips |
| 26 | 1 | R4 | 10 | Resistor, 10 ohm, 5%, 0603 | Panasonic |
| 27 | 1 | R8 | 2K | Resistor, 2K, 5%, 0603 | Panasonic |
| 28 | 2 | R9,R17 | 75 | Resistor, 75 ohm, 5%, 0603 | Panasonic |
| 29 | 1 | R10 | 3300 | Resistor, 3.3K, 5%, 0603 | Panasonic |
| 30 | 1 | R12 | 13K | Resistor, 13K, 5%, 0603 | Panasonic |
| 31 | 1 | R13 | 1.5K | Resistor, 1.5K, 5%, 0603 | Panasonic |

ETC S10

FIG. 56A

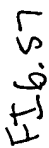
| | | | | | | |
|----|---|---------|------------------|-----------------------------|----------------------|-----------|
| 32 | 1 | R14 | 220 | Resistor, 220 ohm, 5%, 0603 | ERJ3GSYJ221 | Panasonic |
| 33 | 1 | R15 | DNP | Resistor, zero ohm, 0603 | ERJ3GSY0R00 | Panasonic |
| 34 | 2 | R18,R19 | DNP | Resistor, 91 ohm, 5%, 0603 | ERJ3GSYJ910 | Panasonic |
| 35 | 1 | R36 | TBD | Resistor, zero ohm, 0603 | ERJ3GSY0R00 | Panasonic |
| 36 | 1 | R37 | DNP | Resistor, . . 0603 | | Panasonic |
| 37 | 1 | TP1 | Test Point | | | Panasonic |
| 38 | 1 | U1 | PE3282A | IC, Synthesizer | PE3282A | Peregrine |
| 39 | 1 | U2 | CXO-3M-10N-40MHz | Xtal Osc, 40MHz | CXO-3M-10N-40MHZ A/I | Statek |
| 40 | 1 | U4 | TK11233AMTL | Voltage Regulator, 3.5V | TK11235BM | Toko |
| 41 | 1 | U5 | 74125 | IC, BUFFER | MC74LCX125DT | Motorola |
| 42 | 1 | U6 | UPC1678GV | IC, RF Amplifier | UPC1678GV | NEC |

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V02.00

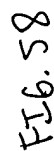
FIG. 56B

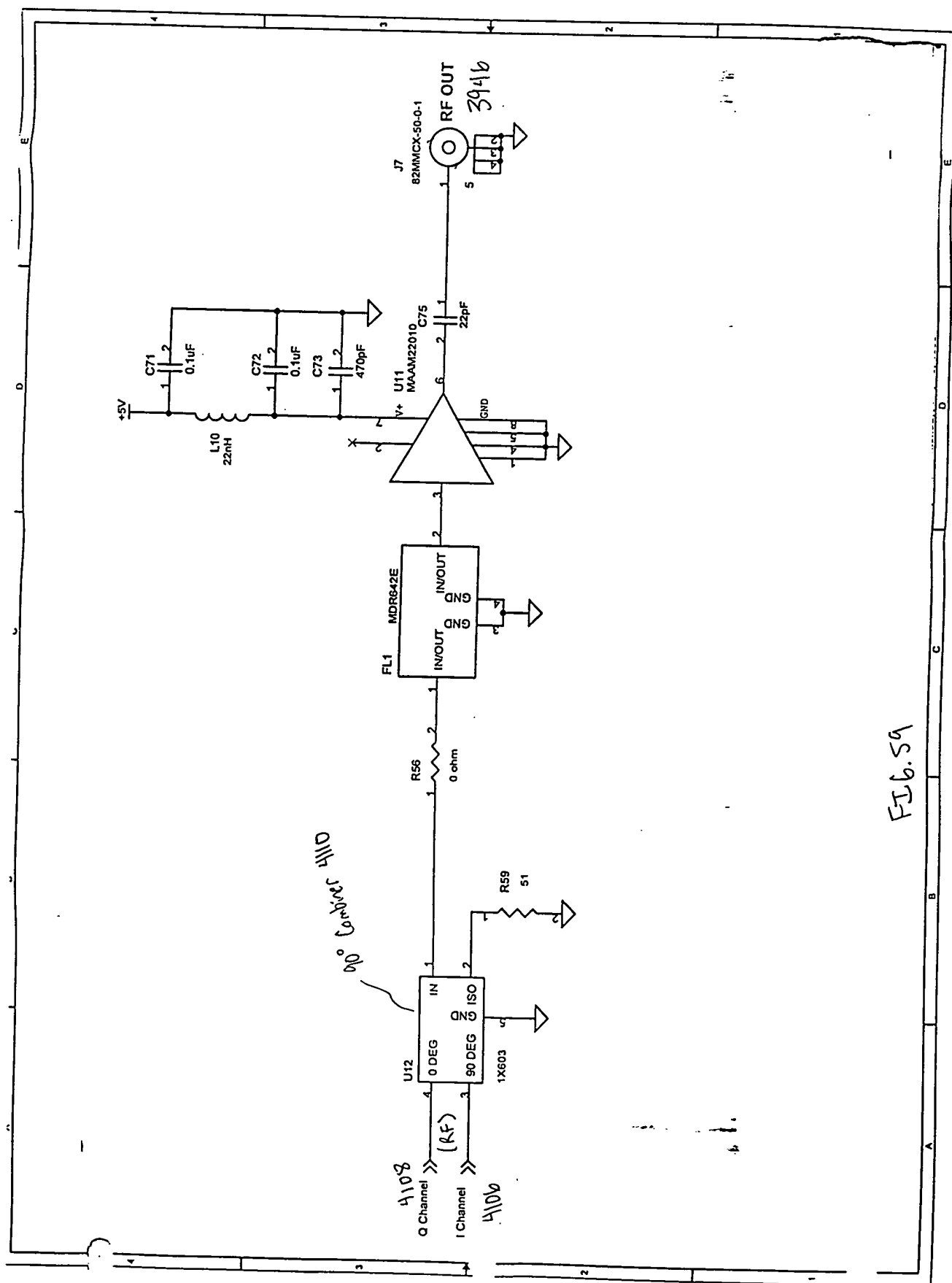
Transmitter
3910

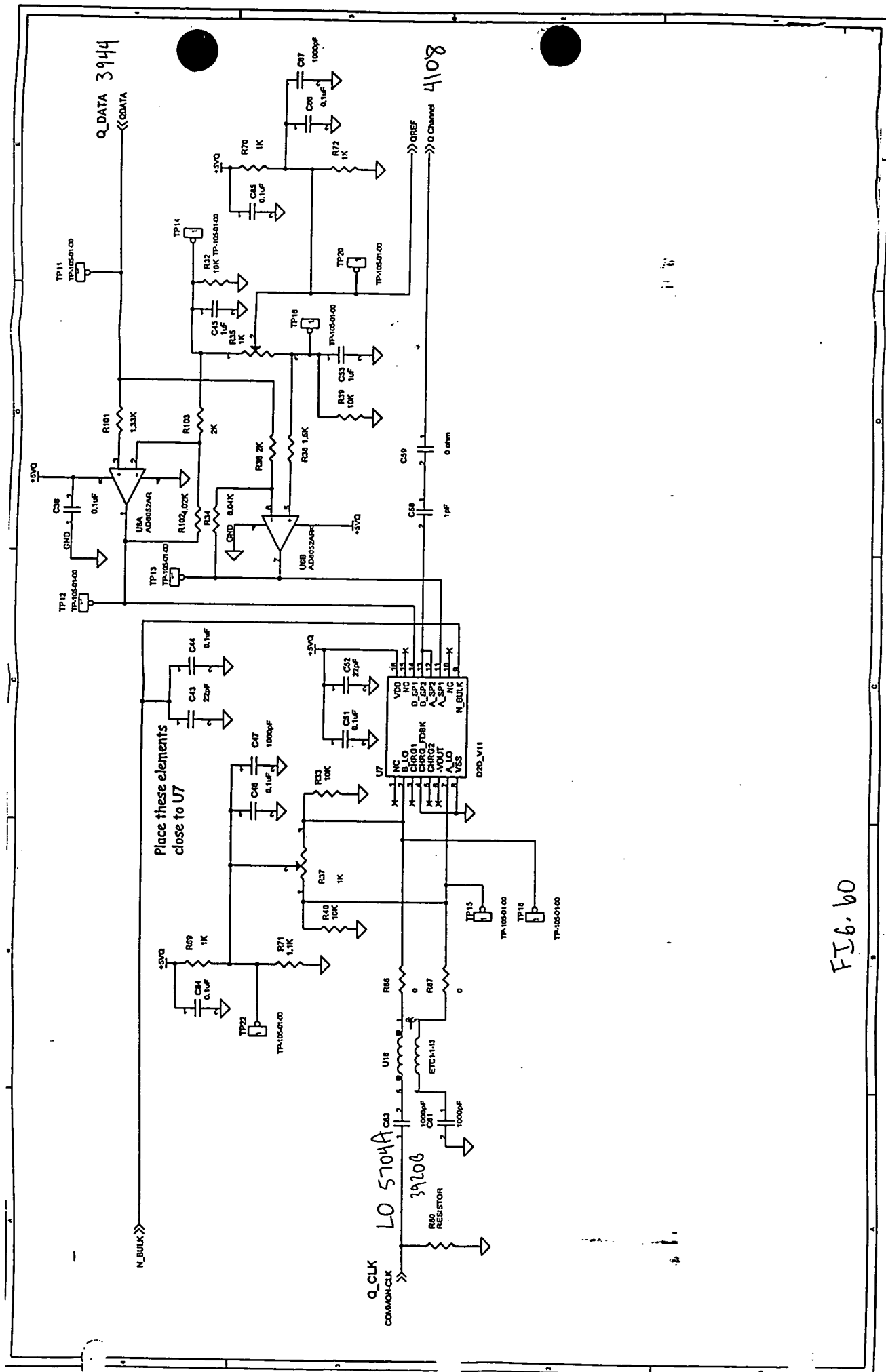


IO generator
5702
(controls
WFT from
base clock)

Data Conditioning
Interfaces 580Z
(Buffers)







Bill Of Materials

| Item | Quantity | Reference | Part | Part Number | Manufacturer |
|------|----------|--|---------------|-----------------|--------------|
| 1 | 21 | C3,C6,C8,C10,C14,C38,C44, C46,C51,C71,C72,C77,C78, C79,C84,C85,C86,C93,C95, C96,C98 | 0.1uF | GRM39X7R104K016 | Murata |
| 2 | 6 | C5,C7,C15,C43,C52,C75 | 22pF | GRM39COG220J050 | Murata |
| 3 | 5 | C9,C16,C45,C53,C89 | 1uF | GRM40Y5V105Z016 | Murata |
| 4 | 8 | C11,C23,C25,C47,C61,C63, C80,C87 | 1000pF | GRM39X7R102K050 | Murata |
| 5 | 2 | C58,C21 | 1pF | GRM39COG010B50V | Murata |
| 6 | 2 | C82,C33 | 4.7uF | T491A475K006AS | KEMET |
| 7 | 2 | C59,C35 | 0 ohm | GRM39COGxxx50V | Murata |
| 8 | 1 | C73 | 470pF | GRM39COG471J050 | Murata |
| 9 | 1 | C83 | 1uF | T491A105M016AS | Kemet |
| 10 | 3 | C90,C91,C92 | 100pF | ECU-V1H101JCV | |
| 11 | 2 | C94,C97 | 0.01uF | GRM39X7R103K016 | Murata |
| 12 | 1 | FL1 | MDR642E | MDR642E | Soshin |
| 13 | 1 | JP1 | Shunt | 69190-402 | BERG |
| 14 | 1 | JP2 | 69190-403 | 69190-403 | BERG |
| 15 | 4 | J7,J8,J9,J10 | 82MMCX-50-0-1 | 82MMCX-50-0-1 | Suhner |
| 16 | 1 | L10 | 22nH | LL1608-F22NK | Coilcraft |
| 17 | 1 | L12 | BLM11A121S | BLM11A121S | Murata |
| 18 | 1 | L13 | 330nH | LL2012-FR33K | |
| 19 | 10 | R5,R6,R12,R13,R32,R33, R39,R40,R95,R100 | 10K | ERJ3EKF1002 | Panasonic |
| 20 | 2 | R34,R7 | 6.04K | ERJ3EKF6041 | Panasonic |
| 21 | 4 | R8,R10,R35,R37 | 1K | 3224W-1-102 | Bourns |
| 22 | 4 | R9,R36,R90,R103 | 2K | ERJ3EKF2001 | Panasonic |
| 23 | 2 | R38,R11 | 1.5K | ERJ3EKF1501 | Panasonic |
| 24 | 3 | R56,R94,R99 | 0 ohm | ERJ3GSY0R00 | Panasonic |
| 25 | 1 | R59 | 51 | ERJ3GSYJ510 | Panasonic |
| 26 | 7 | R60,R61,R62,R84,R85,R86, R87 | 0 | ERJ3GSY0R00 | Panasonic |
| 27 | 6 | R63,R64,R66,R69,R70,R72 | 1K | ERJ3EKF1001 | Panasonic |
| 28 | 2 | R71,R65 | 1.1K | ERJ3EKF1101 | Panasonic |
| 29 | 2 | R80,R79 | RESISTOR | | |
| 30 | 3 | R81,R82,R83 | R | | |
| 31 | 4 | R88,R91,R96,R101 | 1.33K | ERJ3EKF1331 | Panasonic |
| 32 | 2 | R102,R89 | 4.02K | ERJ3EKF4021 | Panasonic |
| 33 | 2 | R92,R97 | 499 | ERJ3EKF4990 | Panasonic |
| 34 | 19 | TP1,TP2,TP3,TP4,TP5,TP6, | TP-105-01-00 | | |

FIG. 61A

| | | | | | |
|----|---|---------------------------|-------------|-------------|----------------|
| | | TP8,TP9,TP11,TP12,TP13, | | | |
| | | TP14,TP15,TP16,TP18,TP19, | | | |
| | | TP20,TP21,TP22 | | | |
| 35 | 3 | U1,U6,U19 | AD8052AR | AD8052AR | Analog Devices |
| 36 | 2 | U7,U2 | D2D_V11 | D2D_V11 | Parker Vision |
| 37 | 1 | U11 | MAAM22010 | MAAM22010 | MACOM |
| 38 | 1 | U12 | 1X603 | 1X603 | Anaren |
| 39 | 1 | U14 | AD1582 | AD1582 | Analog Devices |
| 40 | 1 | U15 | UPG1678 | UPG1678GV | NEC |
| 41 | 1 | U16 | ADP-2-10-75 | ADP-2-10-75 | Mini-Circuits |

42 1

BOARD

B500.641.021 VDS.10

FIG. 61B

004000" 2002000000

TX D2D
850000xx Module
4706

Demodulator
8500003K Module
4704

Receive D2D
8500001C Module
4710

Synthesizer
8500008B Module
4708

LNA/PA
8500002C Module
4712

From PCMCIA Connector Ribbon

Debug

FIG. 62

MOTHER BOARD FOR PCMCIA TEST BED

MOTHER BOARD FOR PCMCIA TEST BED

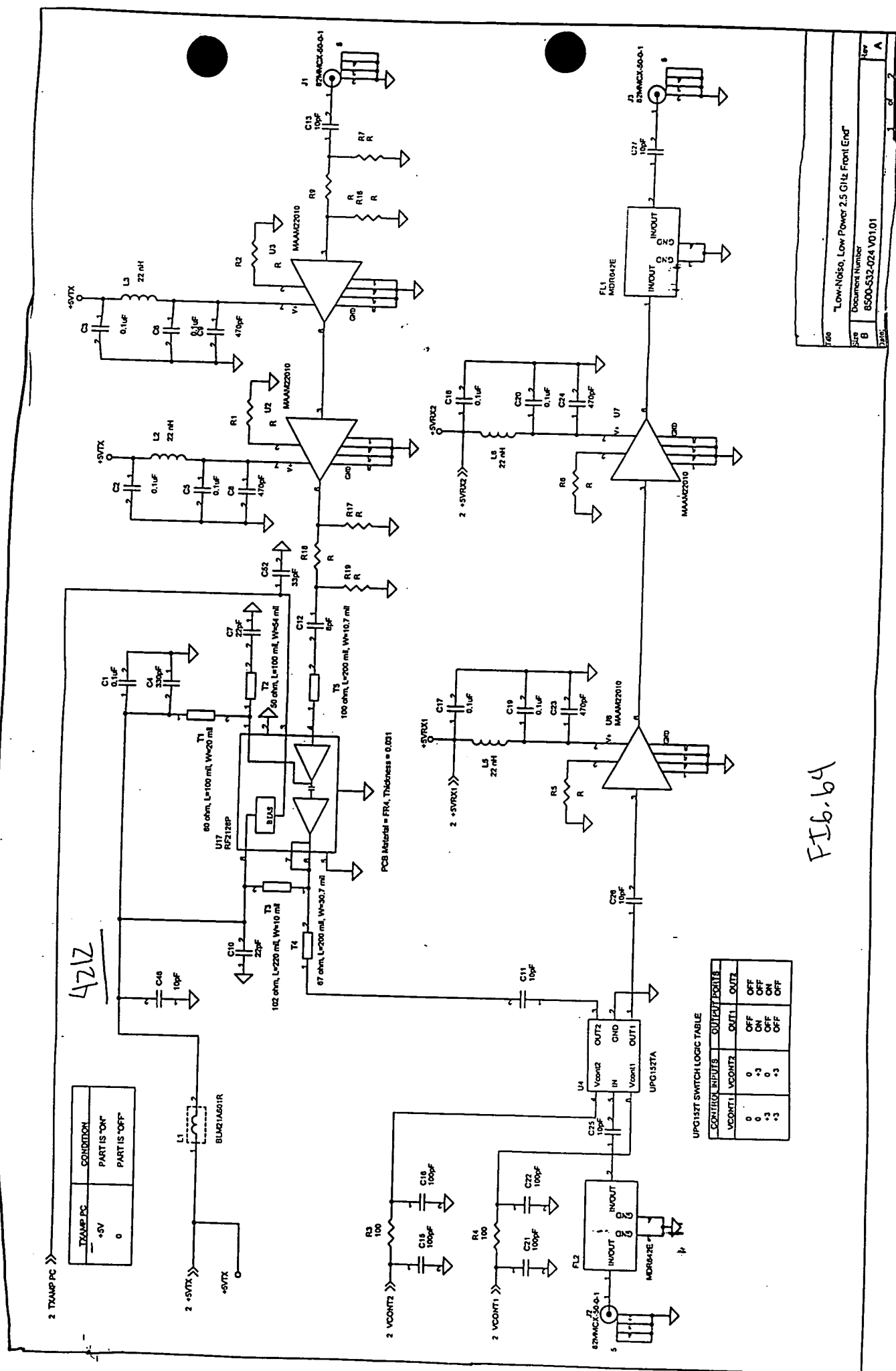
| PCMCIA TEST BED | | | | | | |
|-----------------------|-----|--|-----------------|-------------------------------|-------------------|--------------|
| ST8500-532-023 V01.01 | | | Revision: A | | | |
| Bill Of Materials | | | | | | |
| Item | Qty | Reference | Part | Description | Part Number | Vendor |
| 1 | 4 | C1,C6,C7,C10 | 1uF | Cap, 1uF, +80-20%, 0805 | GRM40Y5V105Z016AD | Murata |
| 2 | 6 | C2,C3,C4,C8,C11,C12 | 100pF | Cap, 100pF, 5%, COG, 0603 | ECU-V1H101JCV | Panasonic |
| 3 | 2 | C5,C9 | .1uF | Cap, .1uF, +80-20%, Y5V, 0603 | | Murata |
| 4 | 3 | C13,C14,C19 | 22uF | Cap, Tant, 22uF, 20%, 20V | T491D226M020AS | Kemet |
| 5 | 4 | C15,C16,C17,C18 | 4.7uF | Cap, Tant, 4.7uF, 20%, 20V | T491C475M020AS | Kemet |
| 6 | 2 | JP2,JP6 | HEADER 7X2 | Receptacle, 7x2pin, .050 | SFMC-107-L1-S-D | Samtek |
| 7 | 9 | JP4, J4, J5, J6, J7, JP9, J9, J10, JP11 | CON3 | Header, 3pin, .100" | 69190-403 | Berg |
| 8 | 1 | JP7 | HEADER 10X2 | Receptacle, 10x2pin, .050 | SFMC-110-L1-S-D | Samtek |
| 9 | 1 | JP8 | HEADER 5X2 | Receptacle, 5x2pin, .050 | SFMC-105-L1-S-D | Samtek |
| 10 | 1 | J2 | EHT-1-10-01-S-D | Header, ribbon, 10x2pin, 2mm | EHT-1-10-01-S-D | Samtek |
| 11 | 3 | J8,J11,J12 | 82MMCX-50-0-1 | Connector, RF | 82MMCX-50-0-1 | Suhner |
| 12 | 2 | L3,L1 | Ferrite Bead | Ferrite Bead, 0805 | BLM21A121S | Murata |
| 13 | 2 | L4,L2 | 330nH | Ind, 330nH, 10%, 0805 | LL2012-FR33K | Toko |
| 14 | 1 | R1 | DNP | Res, 0603 | | Panasonic |
| 15 | 2 | R9,R2 | 91 | Res, 91 Ohm, 5%, 0603 | ERJ-3GSYJ910 | Panasonic |
| 16 | 2 | R7,R3 | 240 | Res, 240 Ohm, 5%, 0603 | ERJ-3GSYJ241 | Panasonic |
| 17 | 4 | R4,R5,R10,R11 | 82 | Res, 82 Ohm, 5%, 0603 | ERJ-3GSYJ820 | Panasonic |
| 18 | 2 | R8,R6 | 5K | Var Res, 5K, 10% | 3296W001502 | Bourns |
| 19 | 10 | R12, R13, R14, R15, R16, R17, R18, R19, R20, R21 | 180 | Res, 180 Ohm, 5%, 0603 | ERJ-3GSYJ181 | Panasonic |
| 20 | 10 | R22, R23, R24, R25, R26, R27, R28, R29, R30, R31 | 390 | Res, 390 Ohm, 5%, 0603 | ERJ-3GSYJ391 | Panasonic |
| 21 | 2 | U5,U1 | UPG1678 | IC, RF Buffer | UPG1678GV | NEC |
| 22 | 2 | U4,U2 | LM317 | IC, Voltage Regulator | LM317T | National |
| 23 | 1 | U3 | ADP-2-10-75 | RF Splitter | ADP-2-10-75 | MiniCircuits |
| 24 | 1 | U6 | DS3862 | IC, Buffer | DS3862WM | National |

25

Based

ST8500. 641.023 V01.01

Fig. 63



FTb.64

| CONFIG INPUTS | | OUTPUT PERITS | |
|---------------|--------|---------------|------|
| VCONT1 | VCONT2 | OUT1 | OUT2 |
| 0 | 0 | OFF | OFF |
| 0 | +3 | ON | OFF |
| +3 | 0 | OFF | ON |
| +3 | +3 | OFF | OFF |

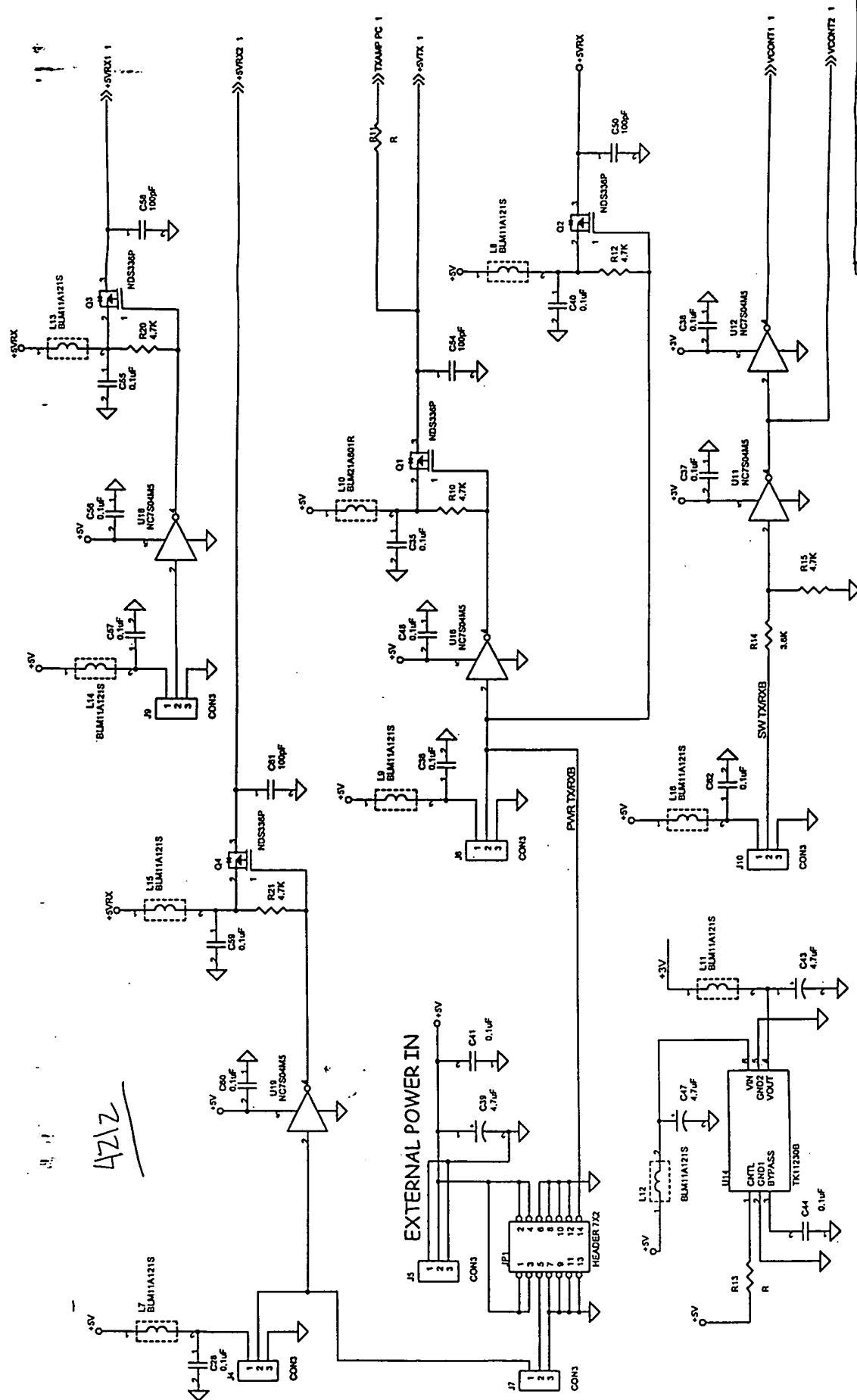


FIG. 66

Low-Noise Low Power 2.5 GHz Front End

Revision: A

Bill Of Materials

| Item | Qty | Reference | Part | Manufacturer | Part Description | Part Number |
|------|-----|--|--------------------------------|--------------|--------------------------------------|-----------------|
| 1 | 24 | C1,C2,C3,C5,C6,C17,C18, C19,C20,C28,C35,C36,C37, C38,C40,C41,C44,C48,C55, C56,C57,C59,C60,C62 | 0.1uF | Murata | .1uF,0603,X7R,20%,16V | GRM39X7R104MO16 |
| 2 | 1 | C4 | 330pF | Murata | 330pF,0603,COG,10%,50 | GRM39COG331K050 |
| 3 | 2 | C10,C7 | 22pF | Murata | 22pF,0603,COG,10%,50 | GRM39COG220K050 |
| 4 | 4 | C8,C9,C23,C24 | 470pF | Murata | 470pF,0603,COG,10%,50 | GRM39COG471K050 |
| 5 | 6 | C11,C13,C25,C26,C27,C48 | 10pF | Murata | 10pF,0603,COG,10%,50 | GRM39COG100K050 |
| 6 | 1 | C12 | 8pF | Murata | 8pF,0603,COG,10%,50 | GRM39COG080K050 |
| 7 | 8 | C15,C16,C21,C22,C50,C54, C58,C61 | 100pF | Murata | 100pF,0603,COG,10%,50 | GRM39COG101K050 |
| 8 | 3 | C39,C43,C47 | 4.7uF | Panasonic | 4.7 uF tantalum, 16V | ECS-T1CY475R |
| 9 | 1 | C52 | 33pF | Murata | 330pF,0603,COG,10%,50 | GRM39COG330K050 |
| 10 | 2 | FL1,FL2 | MDR642E | Soshin | 2.4-2.5GHz BPF | MDR642E |
| 11 | 1 | JP1 | HEADER 7X2 | Samtec | Dual Row, 7 pins per row | FTSH-107-01-F-D |
| 12 | 3 | J1,J2,J3 | 82MMCX-50-0-1 | Suher | RF Connector | 82MMCX-50-0-1 |
| 13 | 6 | J4,J5,J6,J7,J9,J10 | CON3 | Berg | 3 pin header w retentive leg | 69190-403H |
| 14 | 2 | L10,L1 | BLM21A601R | Murata | 600 ohms@100MHz, 500 mA Ferrite Bead | BLM21A601R |
| 15 | 4 | L2,L3,L5,L6 | 22 nH | Coilcraft | 22nH, 0805CS (2012), 5% | 0805CS-220X-BC |
| 16 | 9 | L7,L8,L9,L11,L12,L13,L14, L15,L16 | BLM11A121S | Murata | RF Bead | BLM11A121S |
| 17 | 4 | Q1,Q2,Q3,Q4 | NDS336P | National | P-Channel FET | NDS336P |
| 18 | 12 | R1,R2,R5,R6,R7,R9,R11, R13,R16,R17,R18,R19 | R | Panasonic | | |
| 19 | 2 | R3,R4 | 100 | Panasonic | 0603, 100, 5%, 1/16 W | ERJ-3GSY-J-101 |
| 20 | 5 | R10,R12,R15,R20,R21 | 4.7K | Panasonic | 0603, 4.7K, 5%, 1/16 W | ERJ-3GSY-J-472 |
| 21 | 1 | R14 | 3.6K | Panasonic | 0603, 3.6K, 5%, 1/16 W | ERJ-3GSY-J-362 |
| 22 | 1 | T1 | 80 ohm, L=100 mil, W=20 mil | | 80 ohm, L=100 mil, W=20 mil | |
| 23 | 1 | T2 | 50 ohm, L=100 mil, W=54 mil | | 50 ohm, L=100 mil, W=54 mil | |
| 24 | 1 | T3 | 102 ohm, L=220 mil, W=10 mil | | 102 ohm, L=220 mil, W=10 mil | |
| 25 | 1 | T4 | 67 ohm, L=200 mil, W=30.7 mil | | 67 ohm, L=200 mil, W=30.7 mil | |
| 26 | 1 | T5 | 100 ohm, L=200 mil, W=10.7 mil | | 100 ohm, L=200 mil, W=10.7 mil | |
| 27 | 4 | U2,U3,U6,U7 | MAAM22010 | MACOM | 2.4-2.5 GHz LNA | MAAM22010 |
| 28 | 1 | U4 | UPG152TA | NEC | RF Switch | UPG152TA |
| 29 | 5 | U11,U12,U16,U18,U19 | NC7S04M5 | National | Inverter | NC7S04M5 |
| 30 | 1 | U14 | TK11230B | TOKO | Voltage Regulator | TK11230B |
| 31 | 1 | U17 | RF2128P | RFMD | Medium Power Linear Amplifier | RF2128P |

004000-2582E960

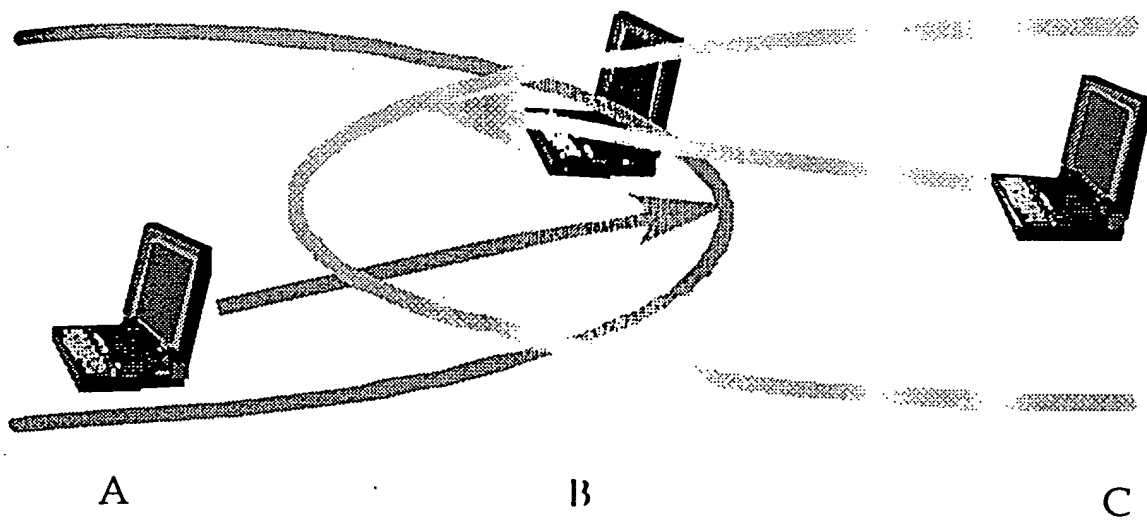


FIG. 67

004030-252250

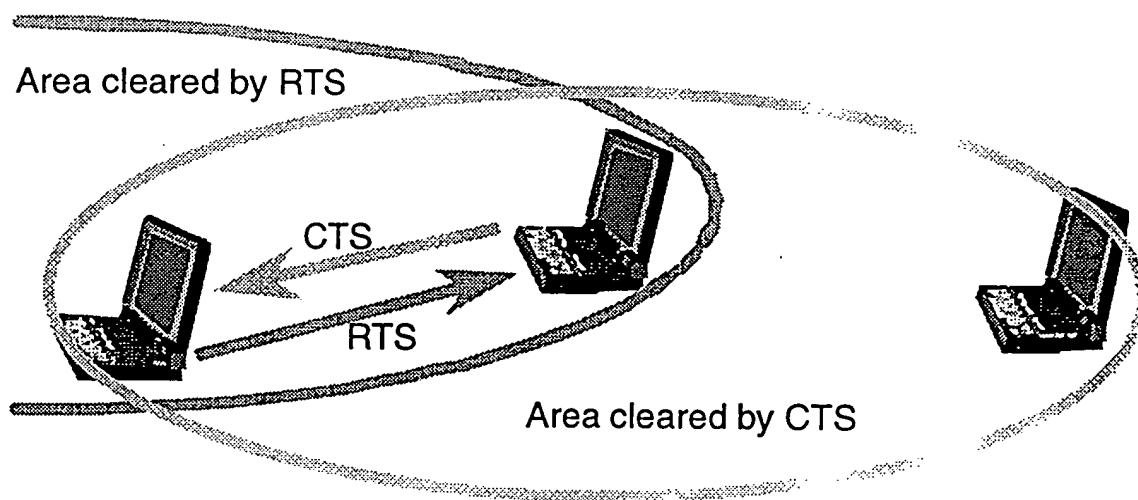
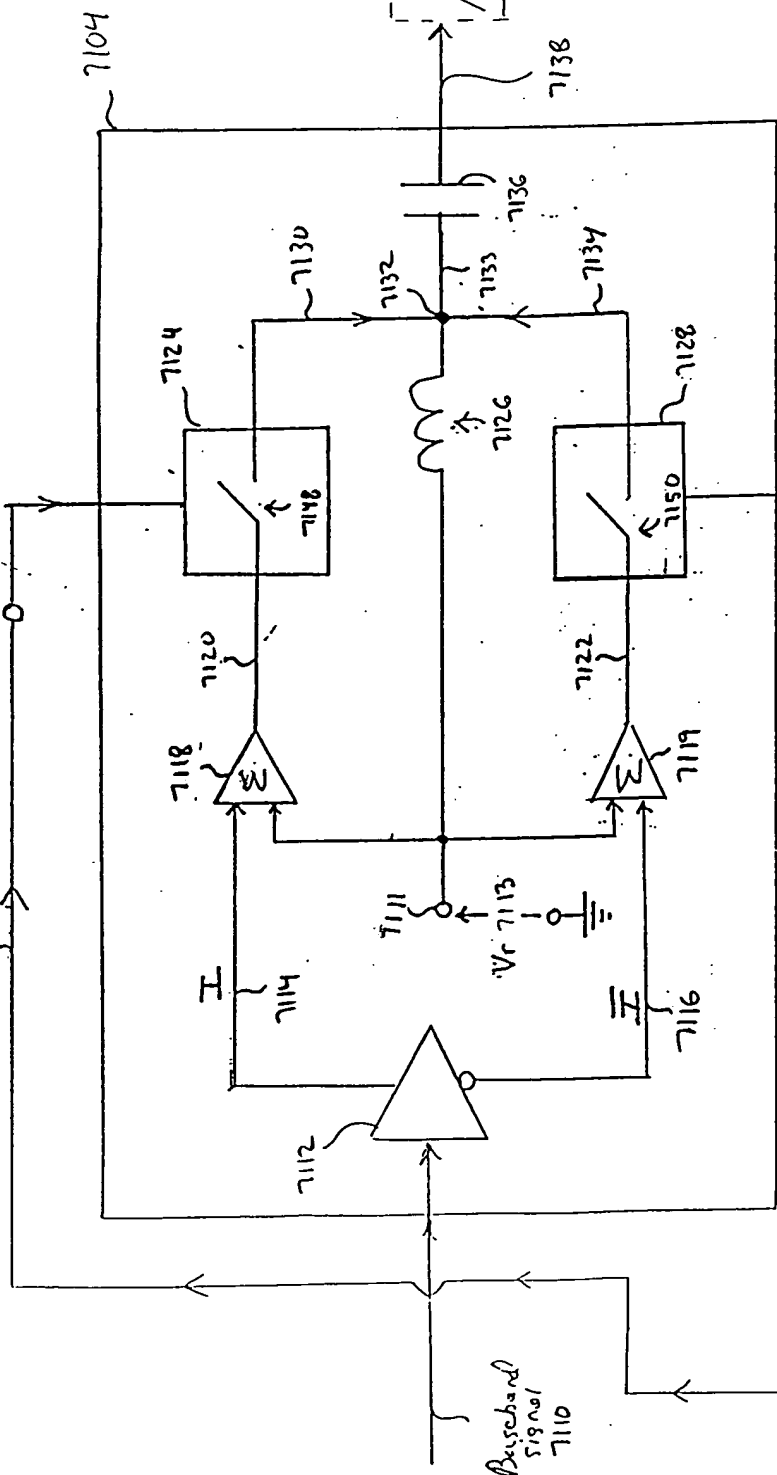


FIG. 68

004220 " 2532660

CNTL
Signal 7123

7102
↓



CNTL
SW62 7127

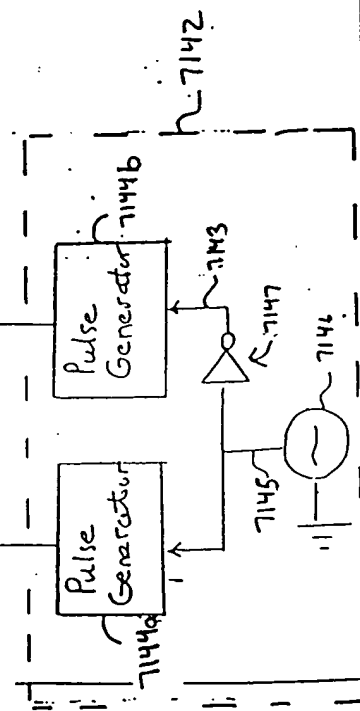


Fig. 71A

004030" 23826350

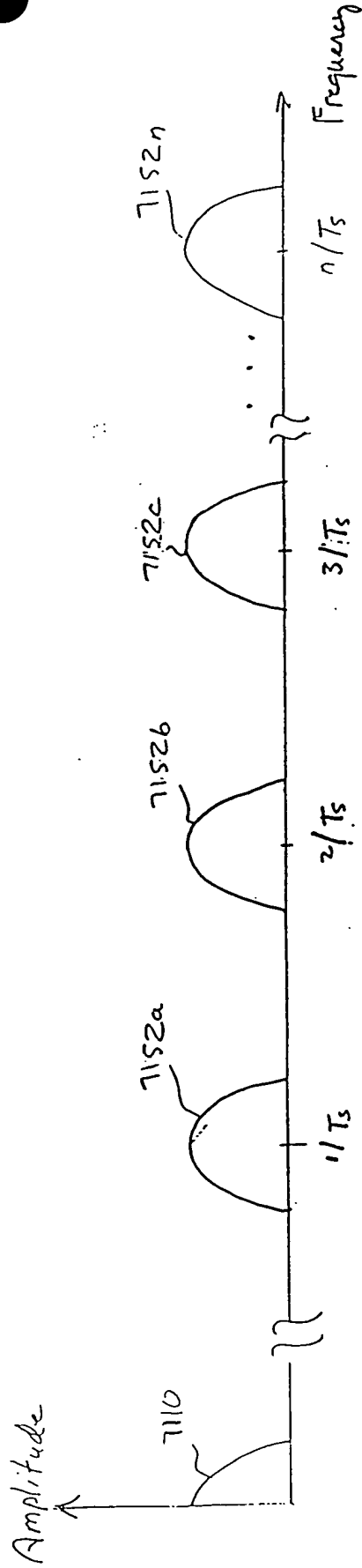


FIG. 71B

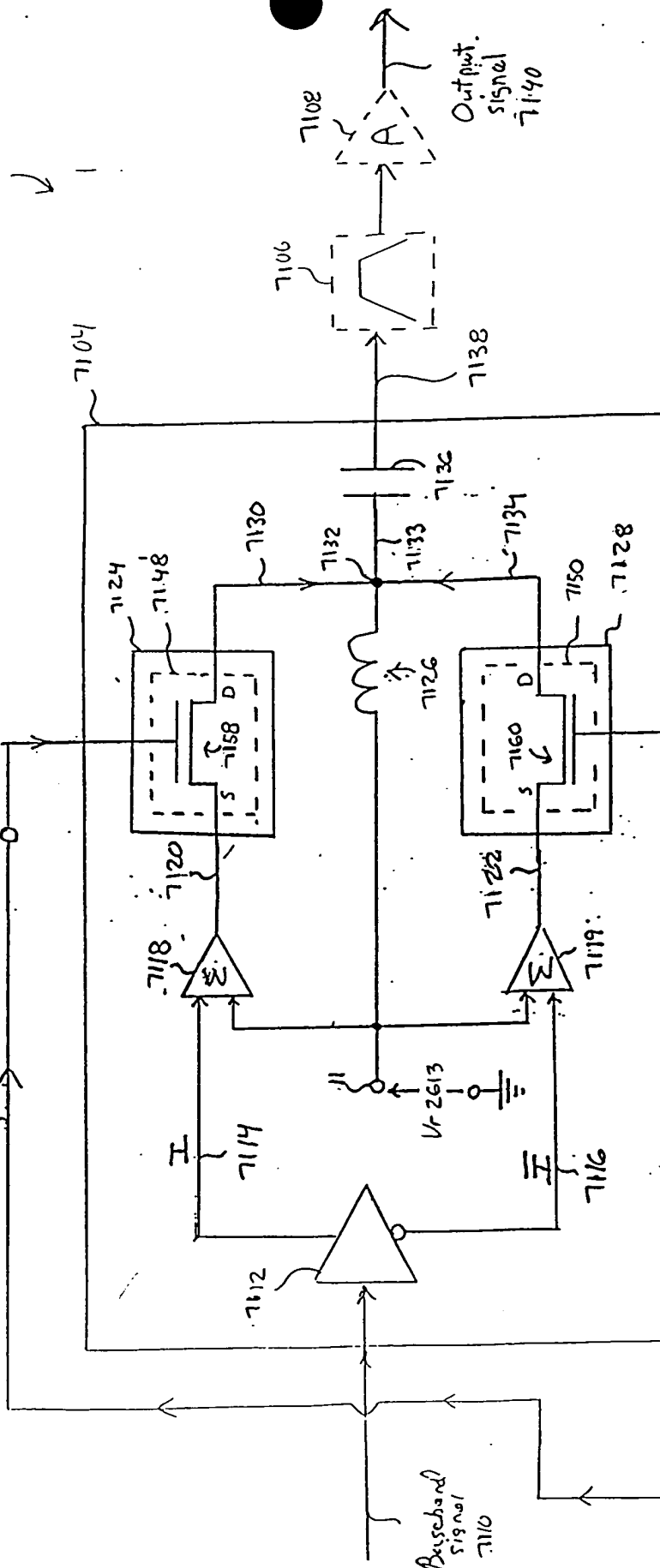
50 SHEETS, FILLED, 3 SQUARE
42381 50 SHEETS EYE 4.5" x 3" SQUARE
42382 100 SHEETS EYE 4.5" x 3" SQUARE
42383 100 SHEETS EYE 4.5" x 3" SQUARE
42384 100 SHEETS EYE 4.5" x 3" SQUARE
42385 100 SHEETS EYE 4.5" x 3" SQUARE
42386 100 SHEETS EYE 4.5" x 3" SQUARE
42387 100 SHEETS EYE 4.5" x 3" SQUARE
42388 100 SHEETS EYE 4.5" x 3" SQUARE
42389 100 SHEETS EYE 4.5" x 3" SQUARE
42390 100 SHEETS EYE 4.5" x 3" SQUARE
42391 100 SHEETS EYE 4.5" x 3" SQUARE
42392 100 SHEETS EYE 4.5" x 3" SQUARE
42393 100 SHEETS EYE 4.5" x 3" SQUARE
42394 100 SHEETS EYE 4.5" x 3" SQUARE
42395 100 SHEETS EYE 4.5" x 3" SQUARE
42396 100 SHEETS EYE 4.5" x 3" SQUARE
42397 100 SHEETS EYE 4.5" x 3" SQUARE
42398 100 SHEETS EYE 4.5" x 3" SQUARE
42399 100 SHEETS EYE 4.5" x 3" SQUARE
42400 100 SHEETS EYE 4.5" x 3" SQUARE

McN National Brand

004030 25222360

CNTL
Signal 7123

7162



Reference
Signal
7110

Output
Signal
7140

CNTL
SW6L
7127

Pulse
Generator
7141a

Pulse
Generator
7141b

7143

7147

7146

7142

FIG. 71D

FIG. 72A

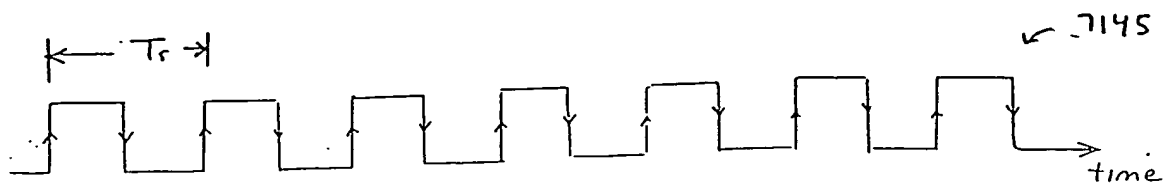


FIG. 72B

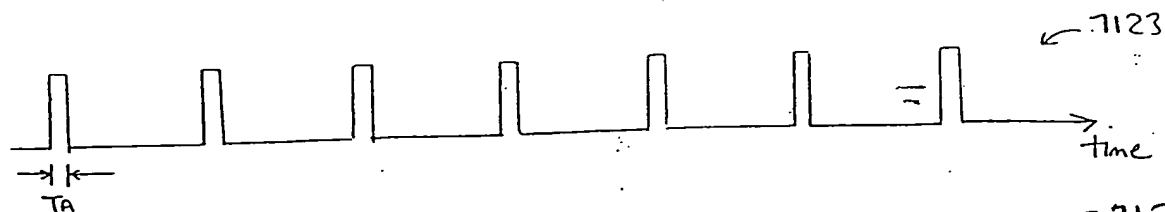


FIG. 72C

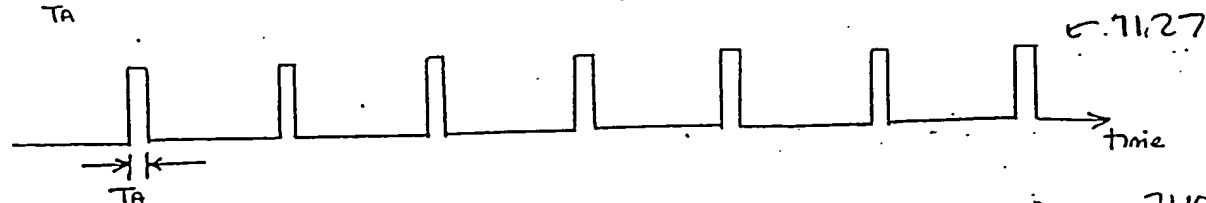


FIG. 72D

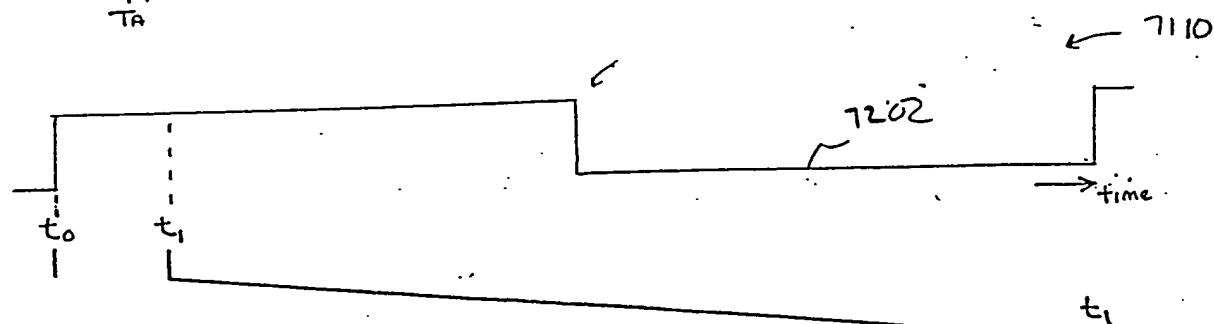


FIG. 72E

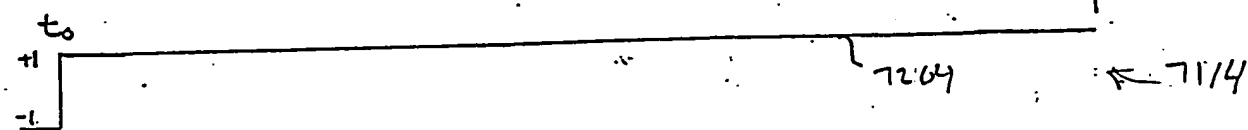


FIG. 72F

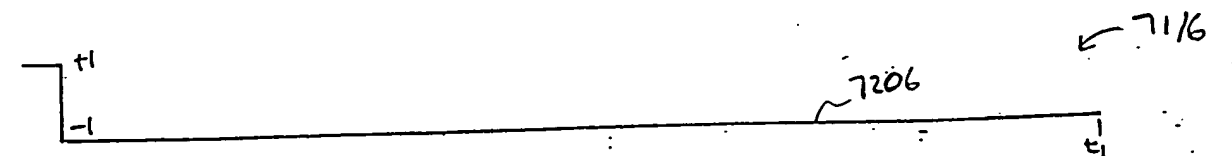


FIG. 72G

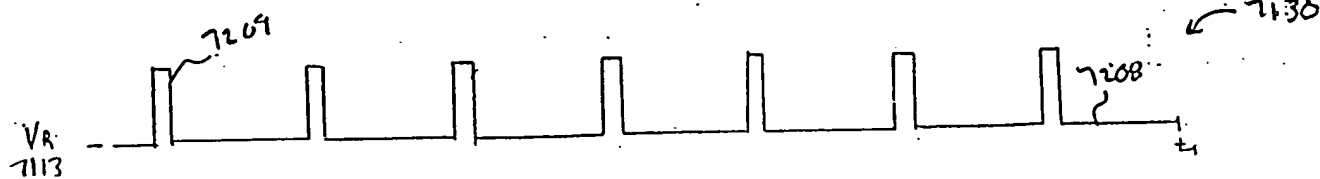


FIG. 72H

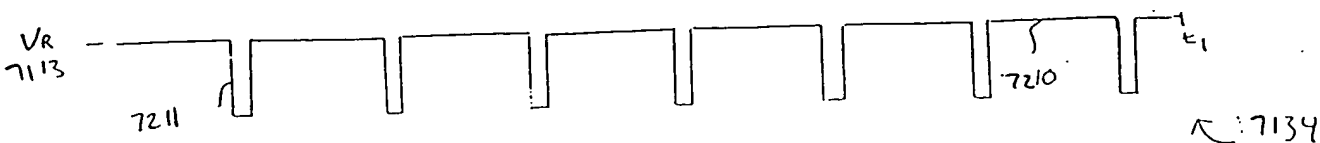
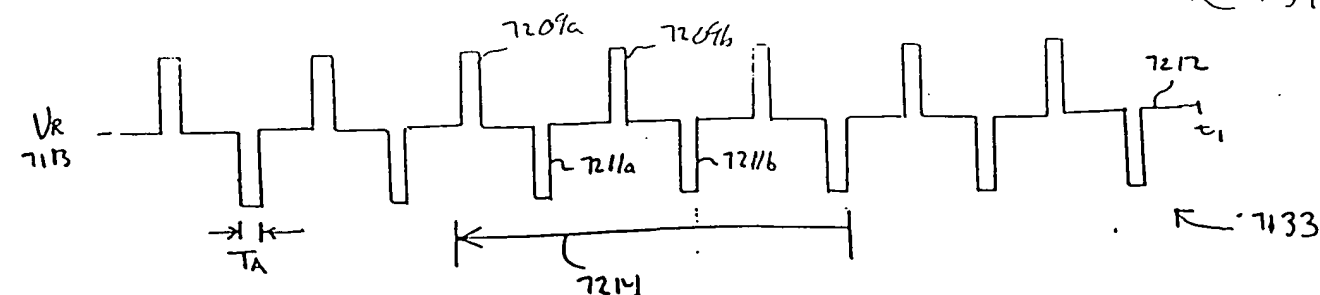


FIG. 72I



Aperture = 500ps
 Fundamental Clock = 200Mhz (5th Subharmonic)
 Square Wave Frequency = 200Mhz

1216

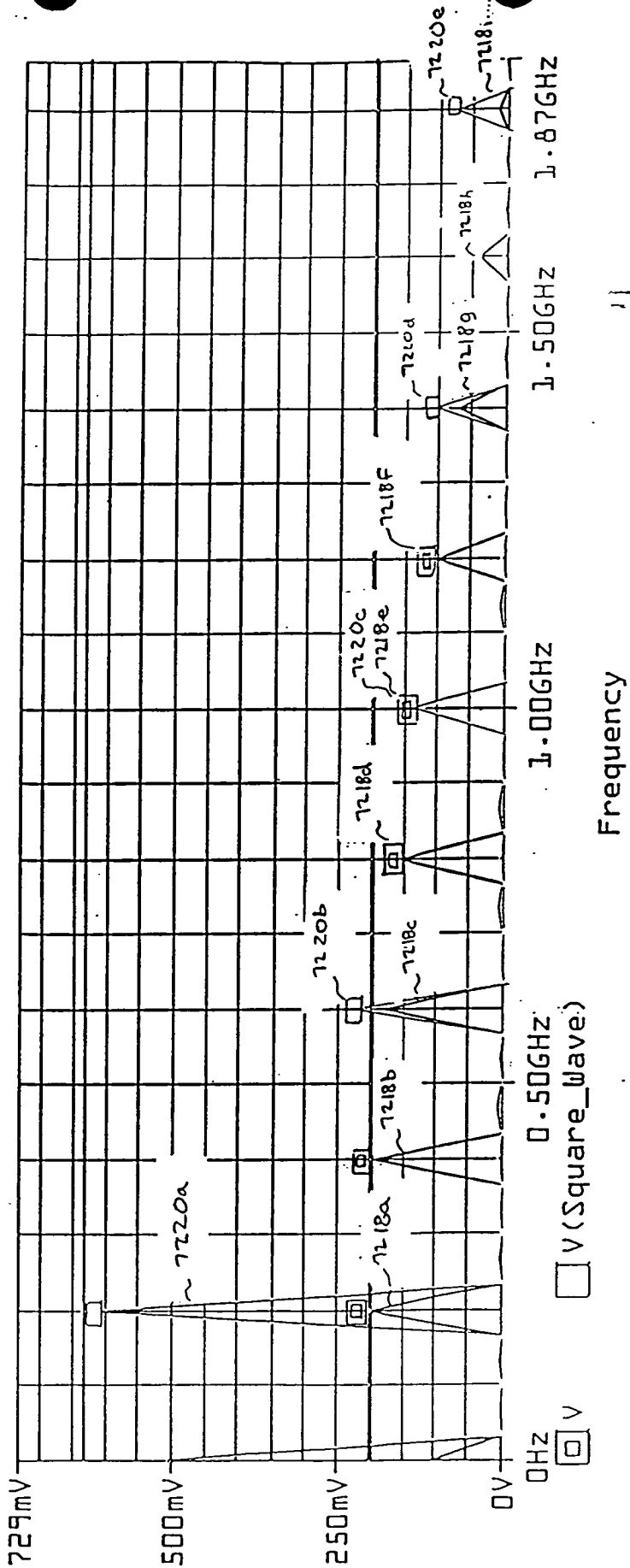


FIG. 72J

004030 2322960

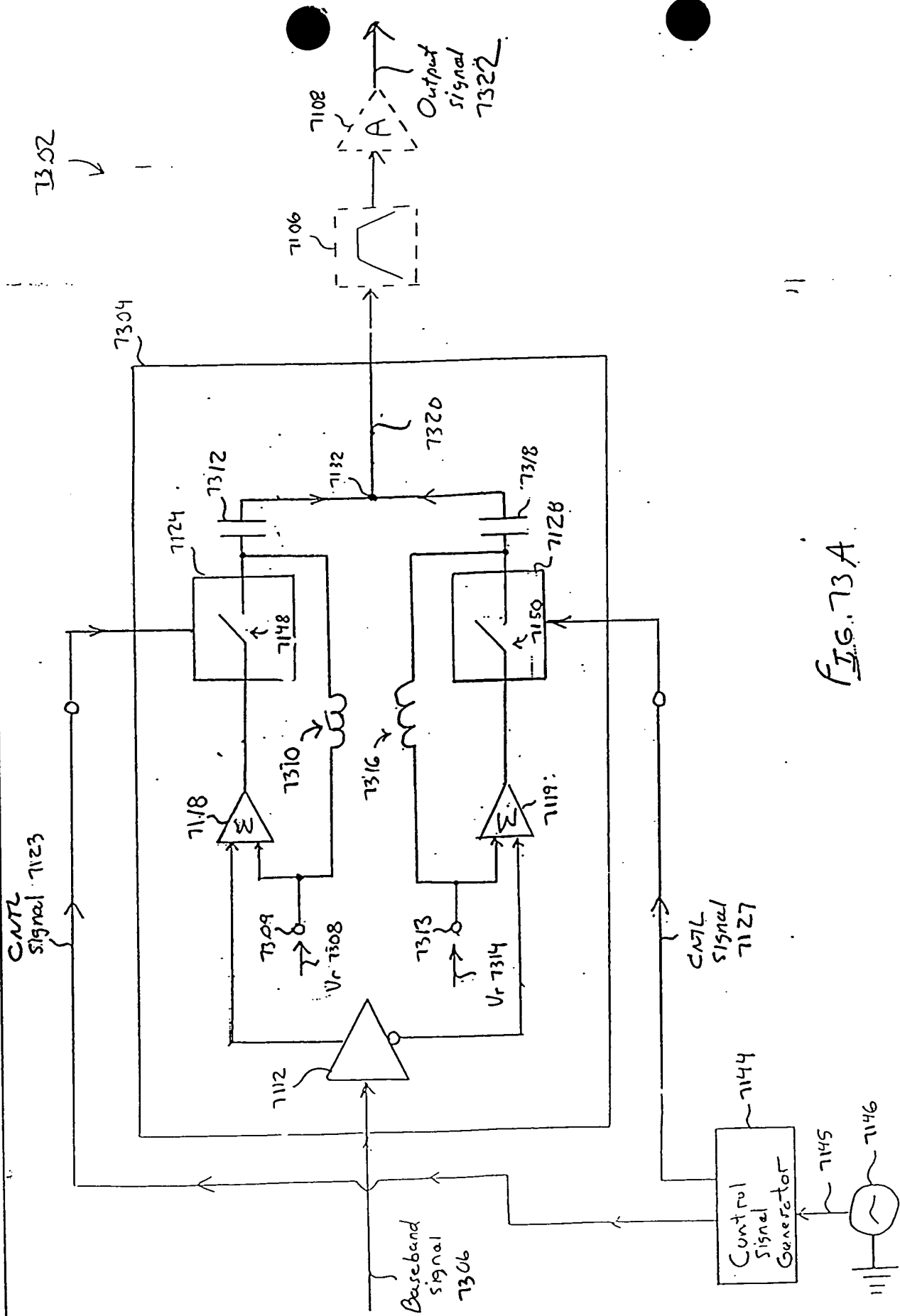


FIG. 73A

ROBERTS FULLER SQUARE
43041 100 PAPER 11 1/2 X 11 1/2
43042 100 PAPER 11 1/2 X 11 1/2
43043 100 PAPER 11 1/2 X 11 1/2
43044 100 PAPER 11 1/2 X 11 1/2
43045 100 PAPER 11 1/2 X 11 1/2
43046 100 PAPER 11 1/2 X 11 1/2
43047 100 PAPER 11 1/2 X 11 1/2
43048 100 PAPER 11 1/2 X 11 1/2
43049 100 PAPER 11 1/2 X 11 1/2
43050 100 PAPER 11 1/2 X 11 1/2

Robertson Brand

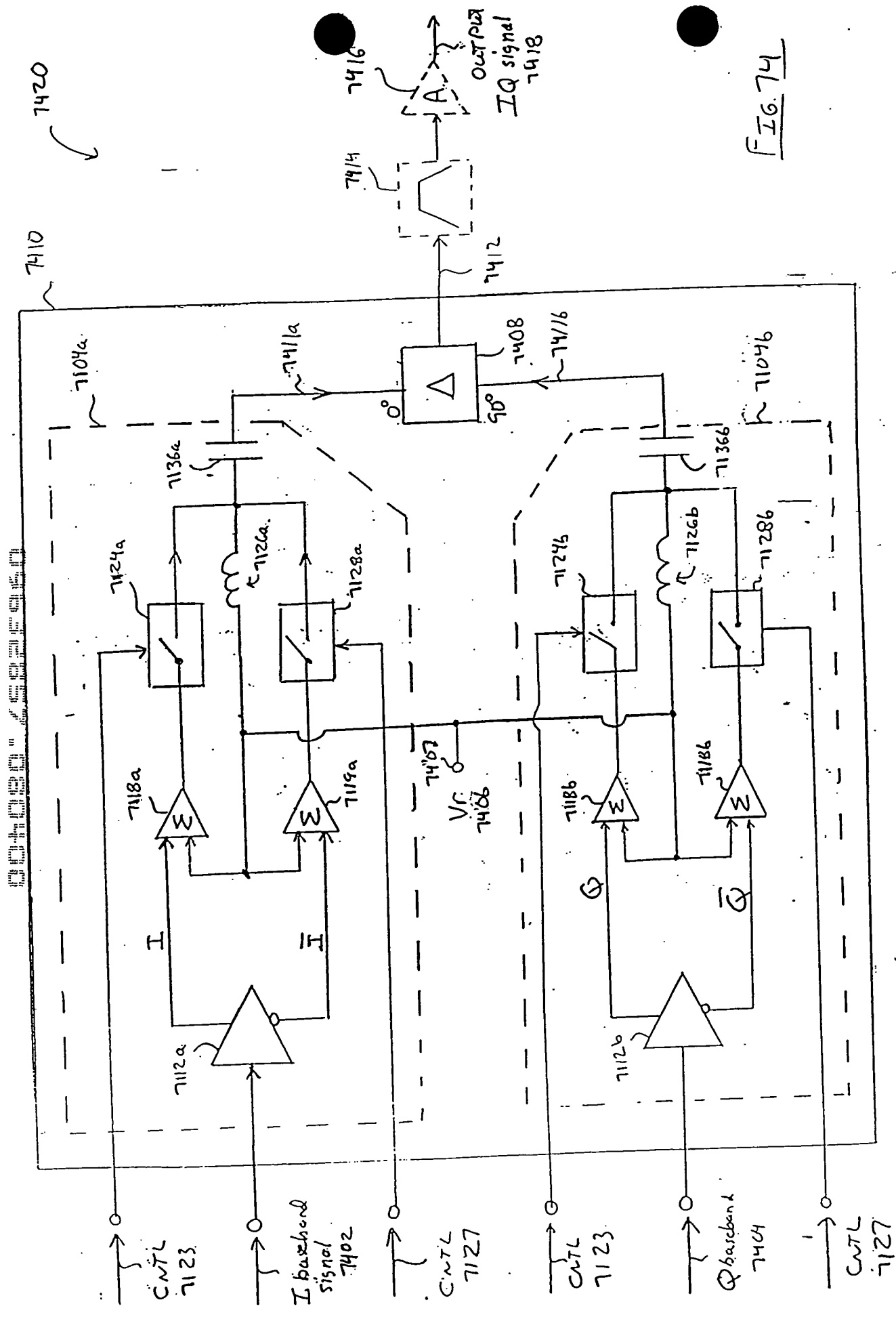


FIG. 74

809L → 209L

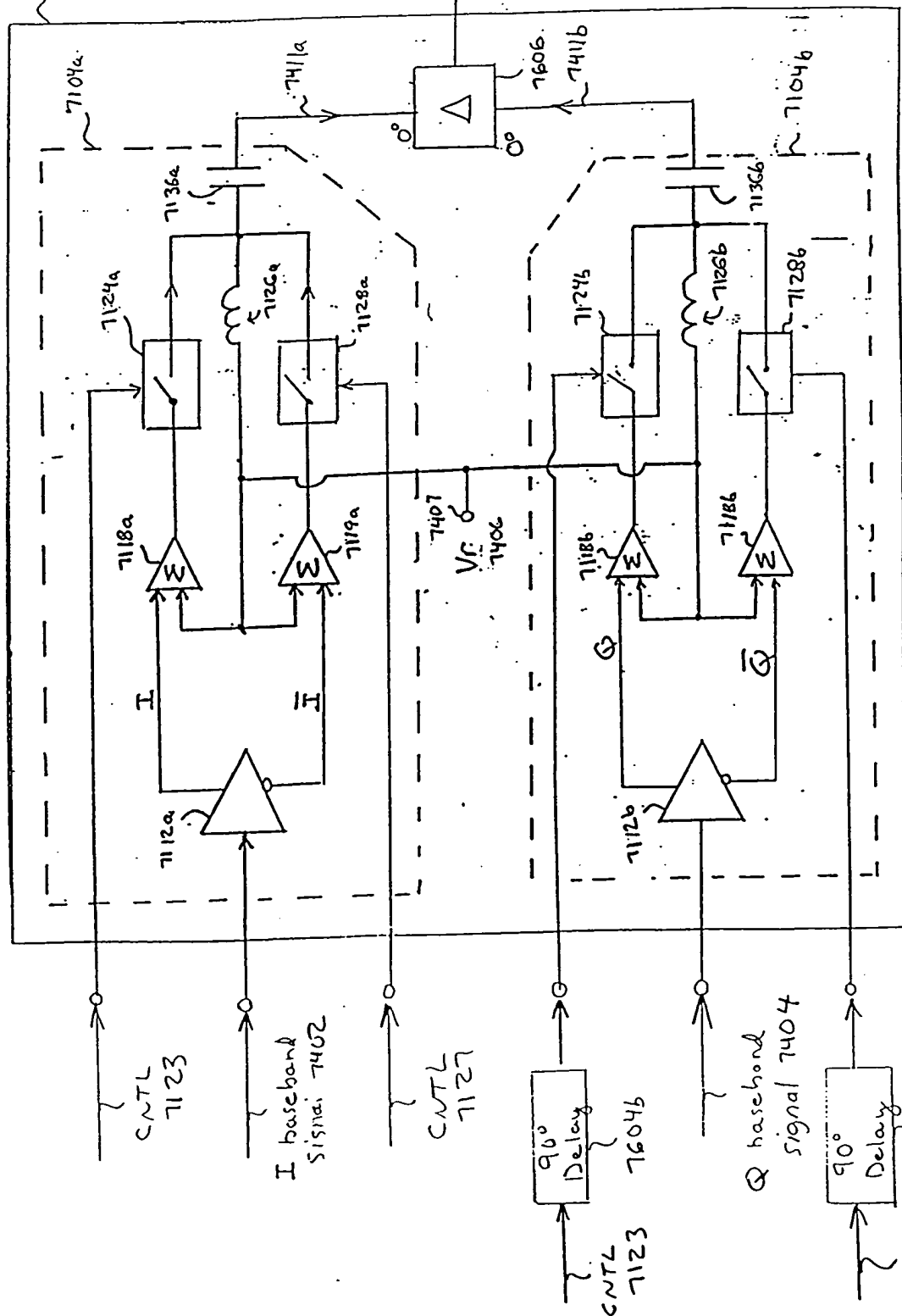
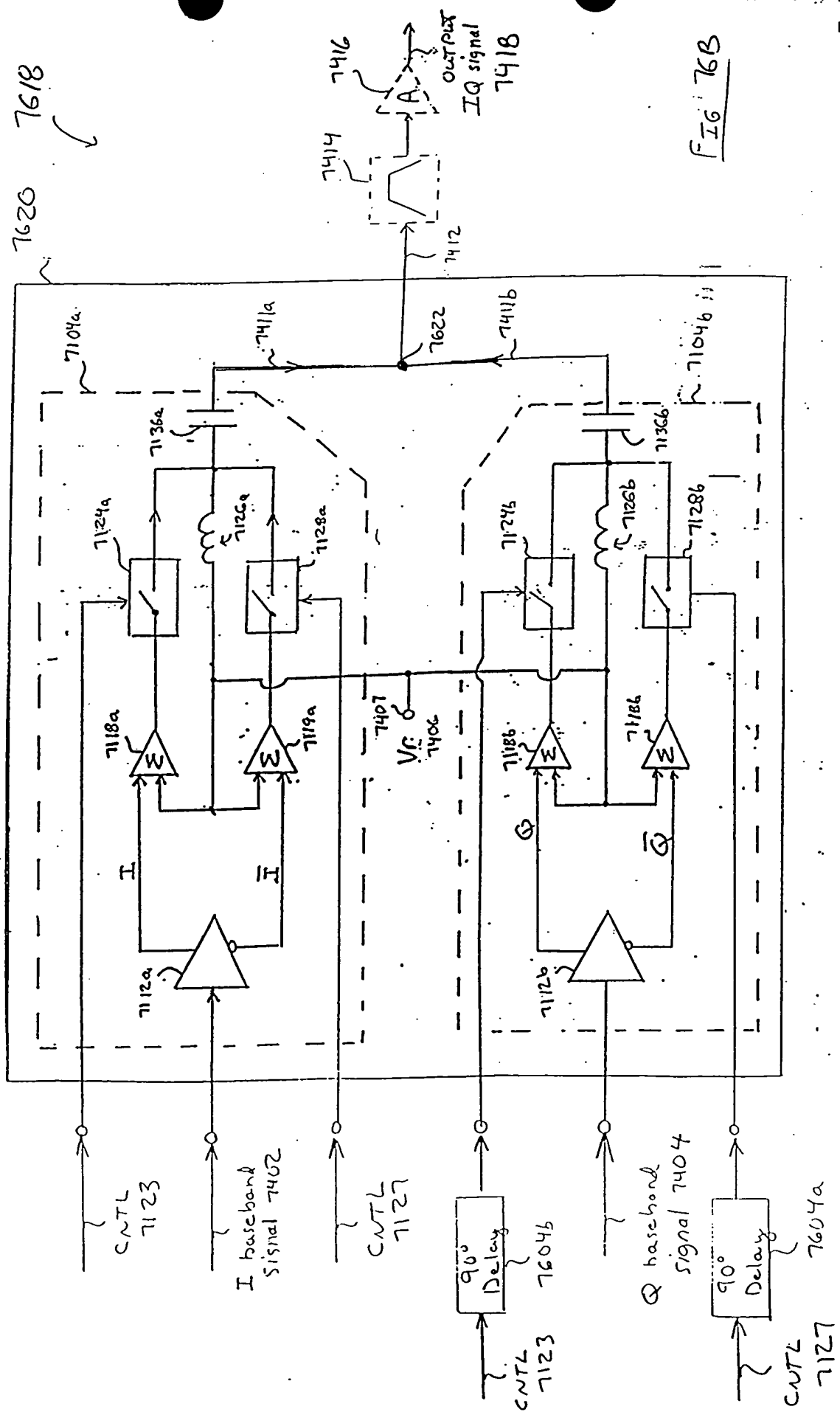


FIG. 76A

[illegible]

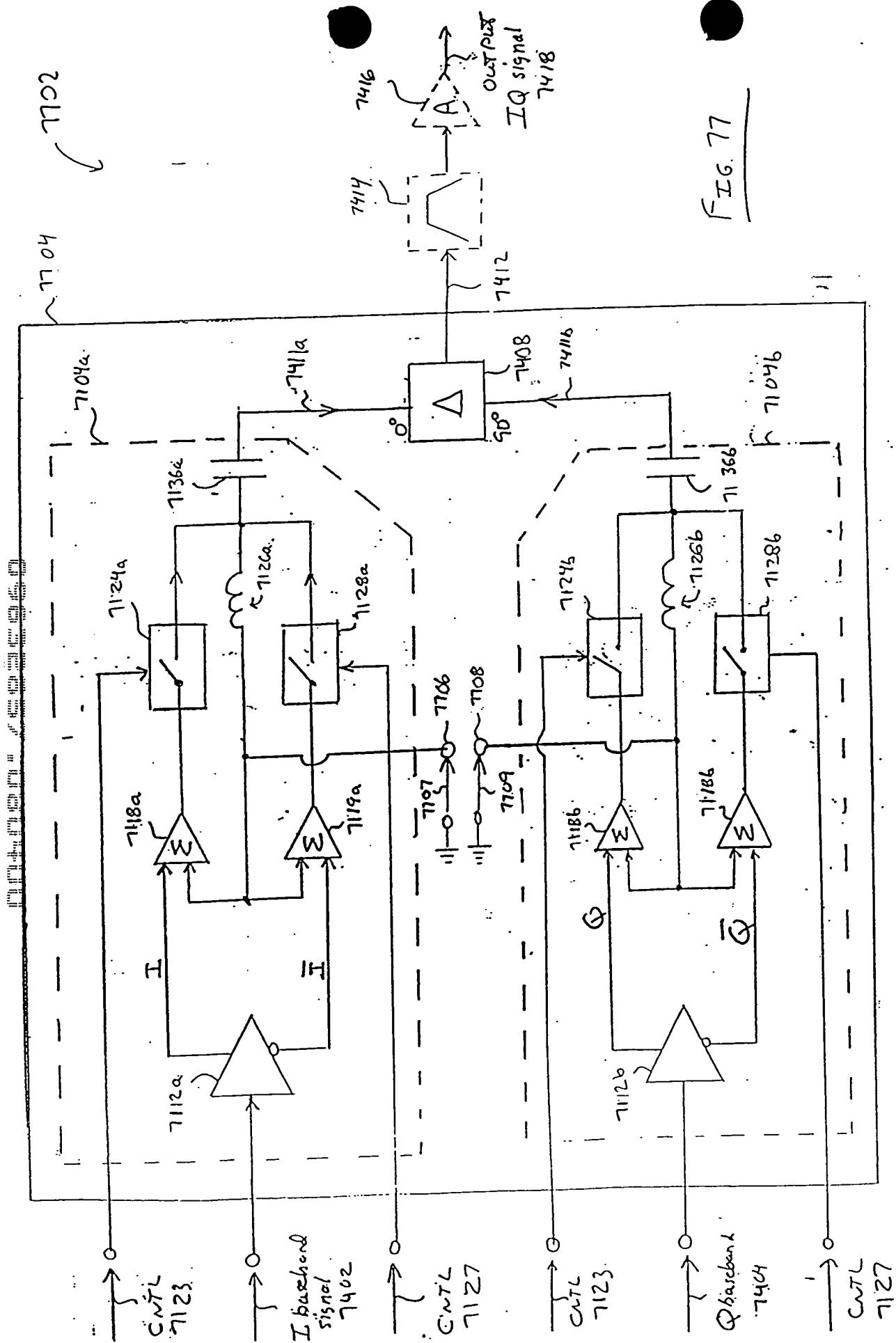
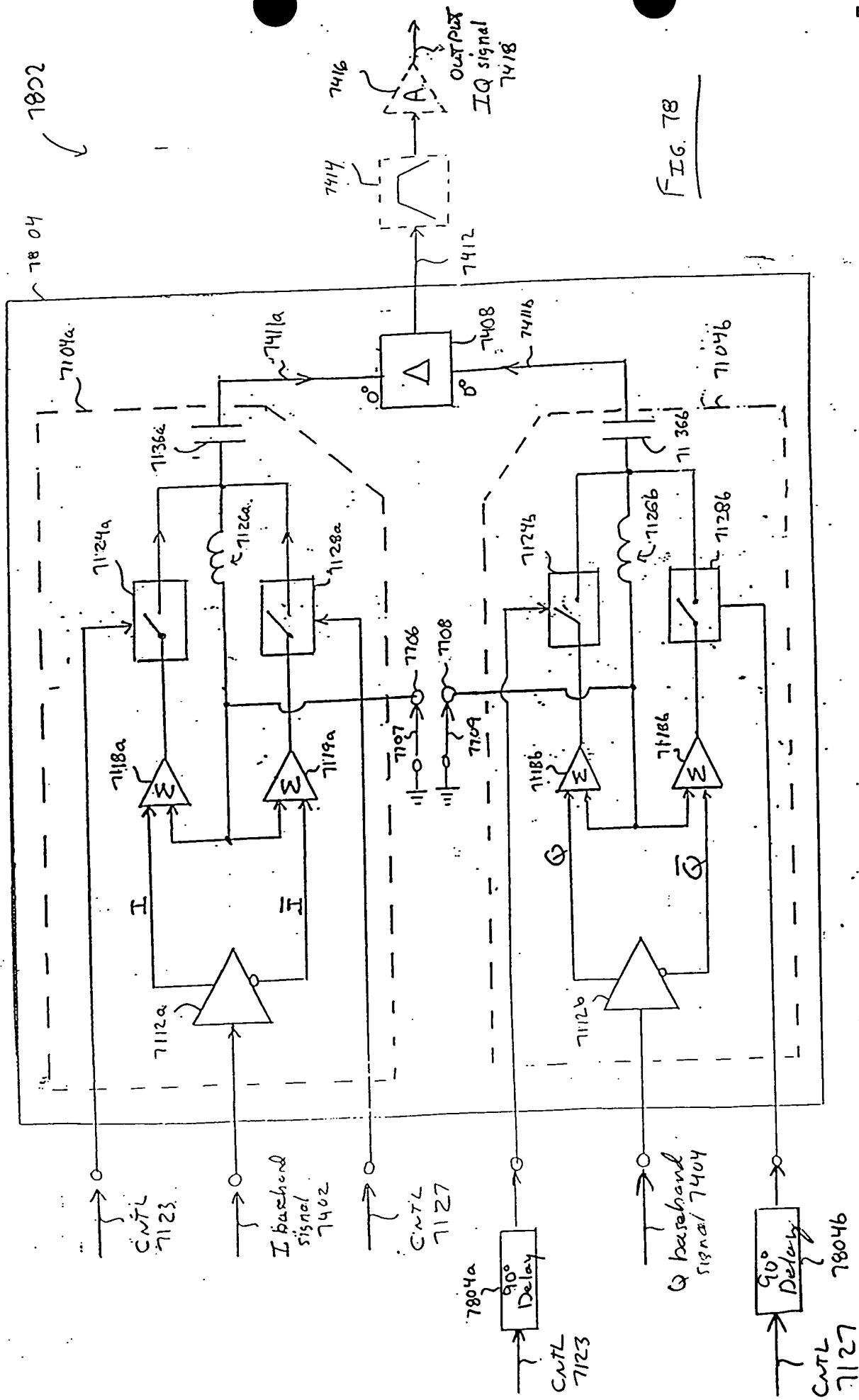


FIG. 77

004030 22260



004080-2532550

7900

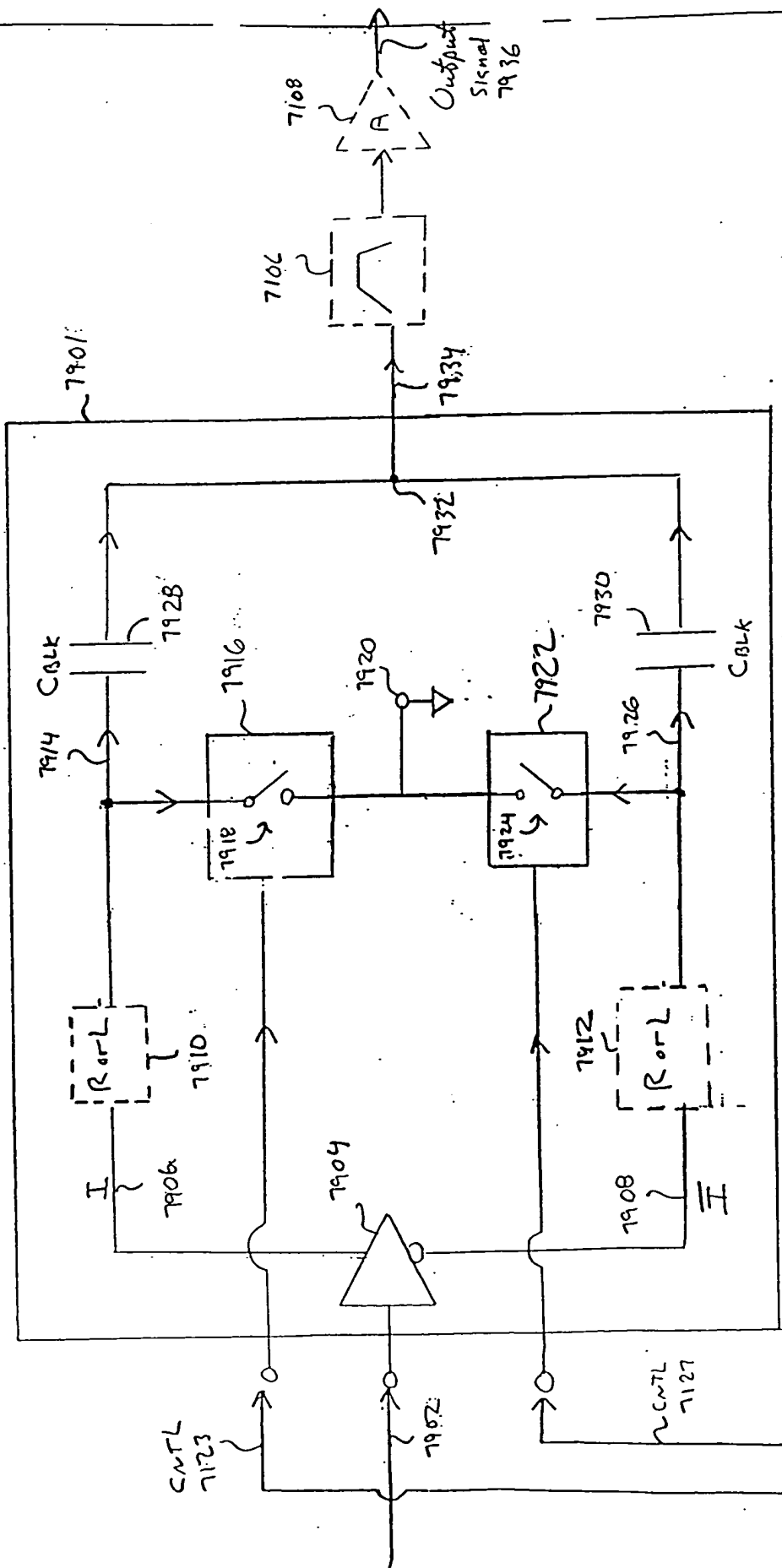


Fig. 79A

7142

CNTL Signal generator

DESIGN

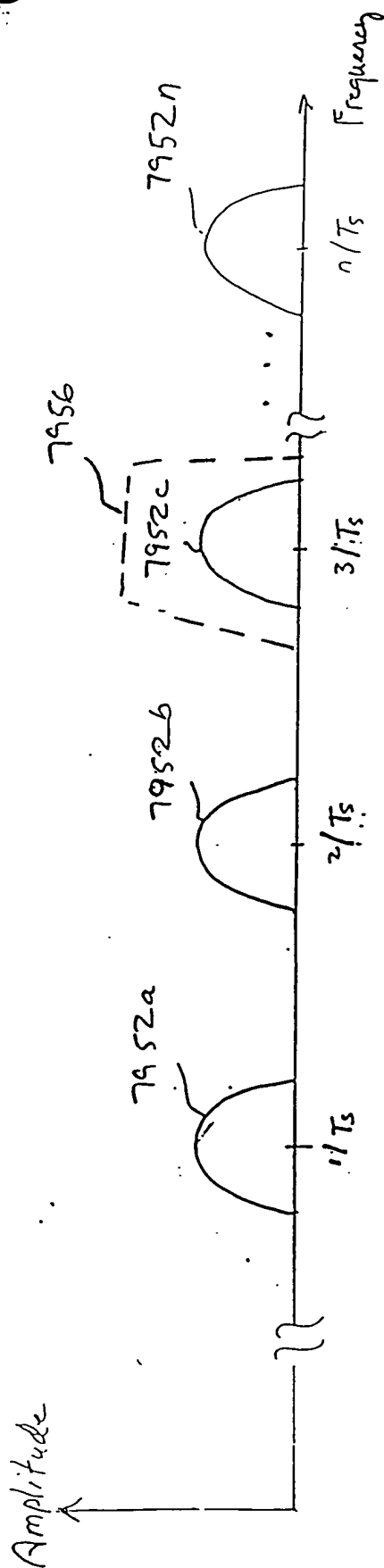


FIG. 79c

004030 003030

7900

✓

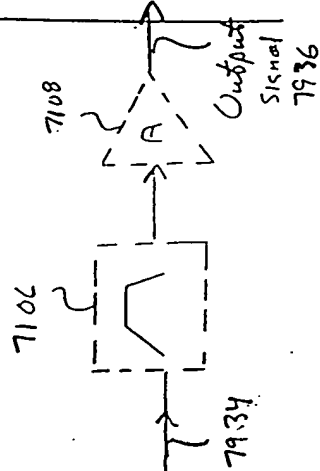
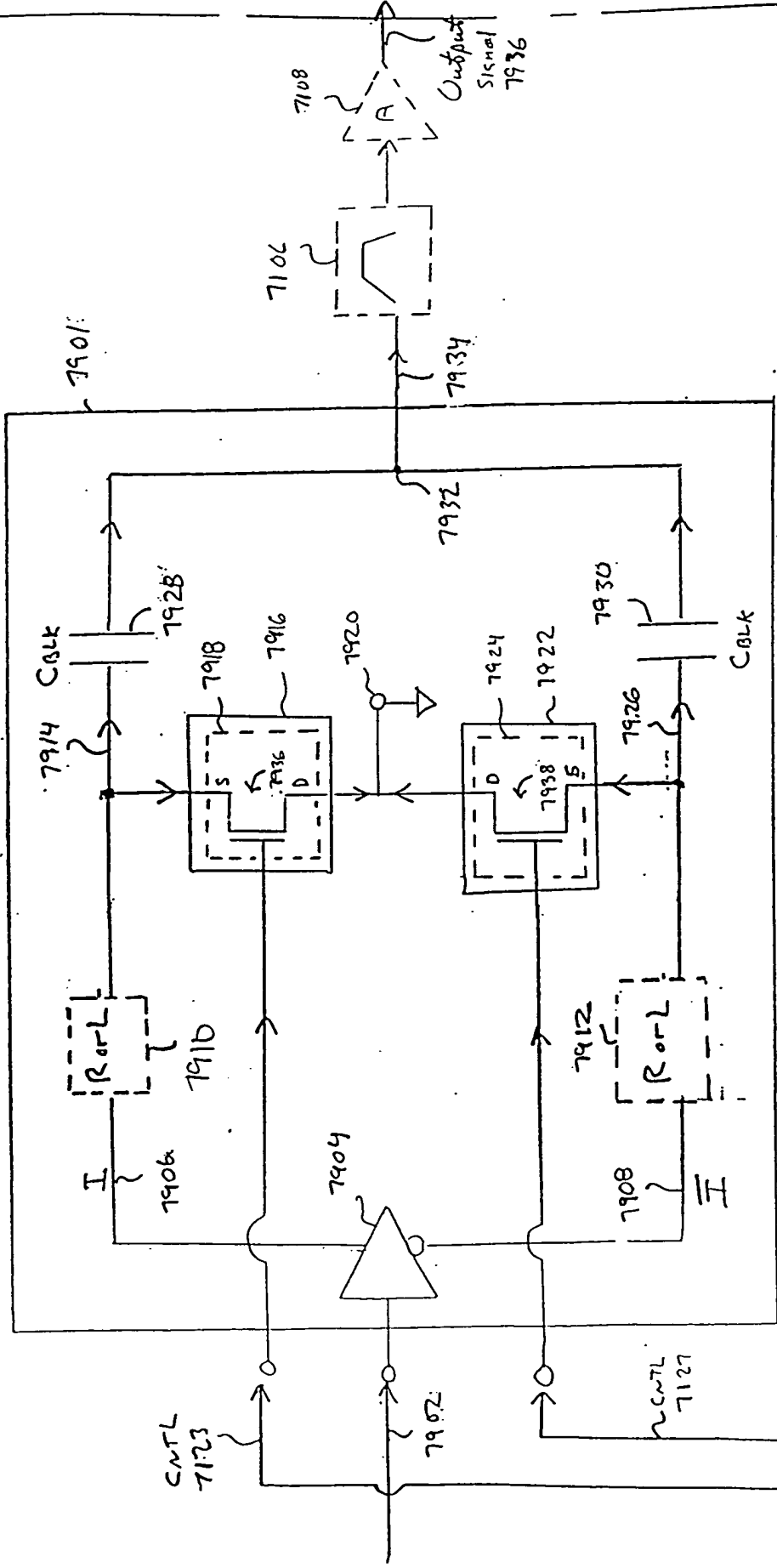


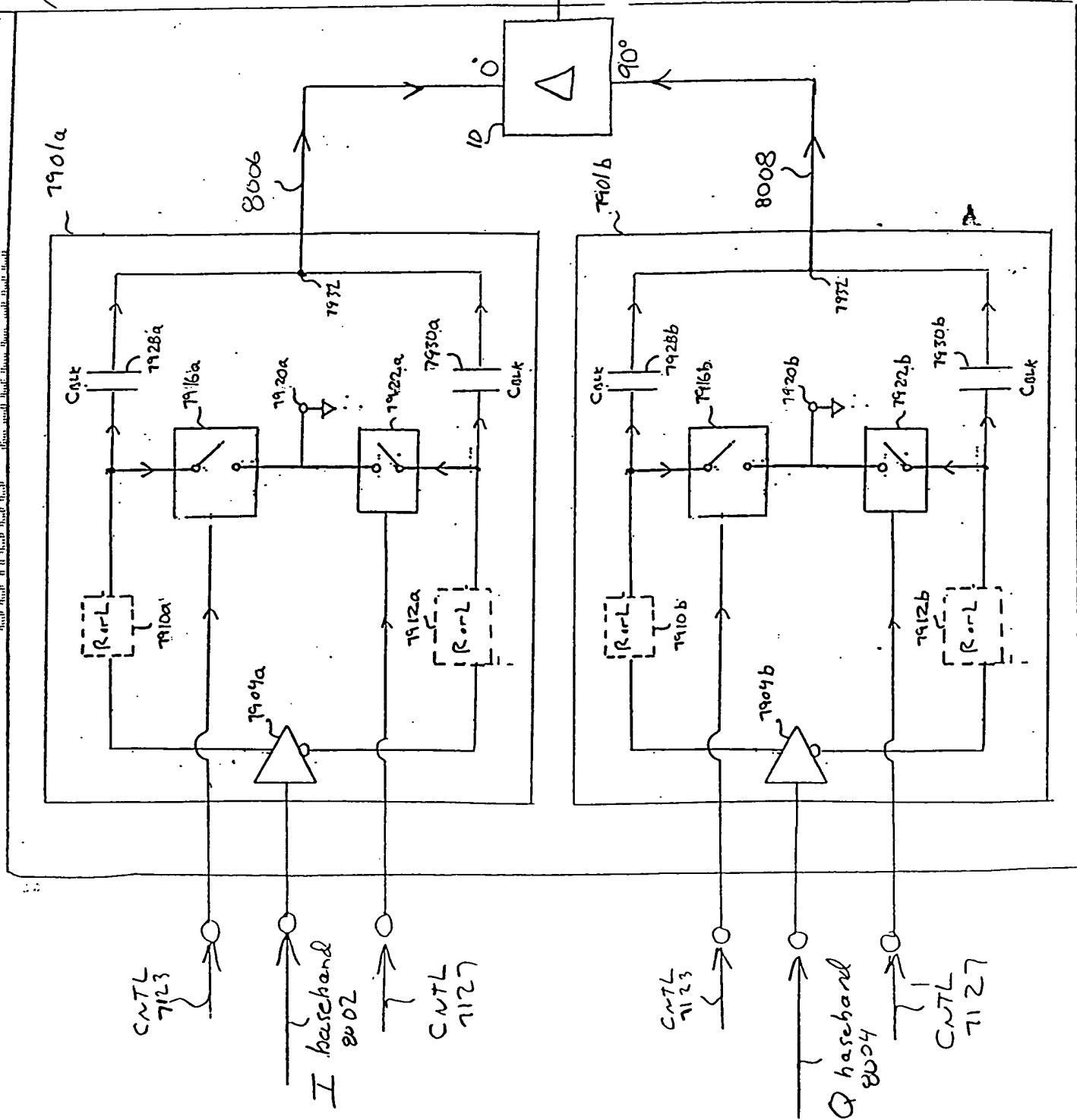
FIG. 7D

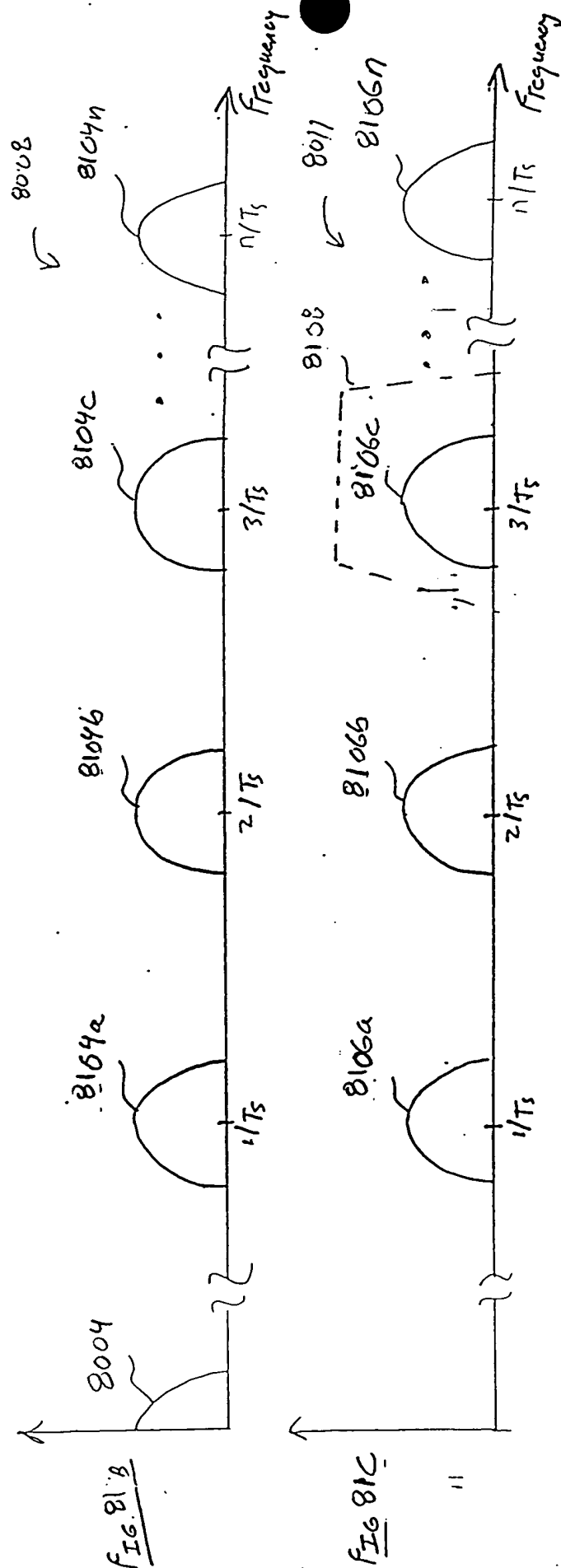
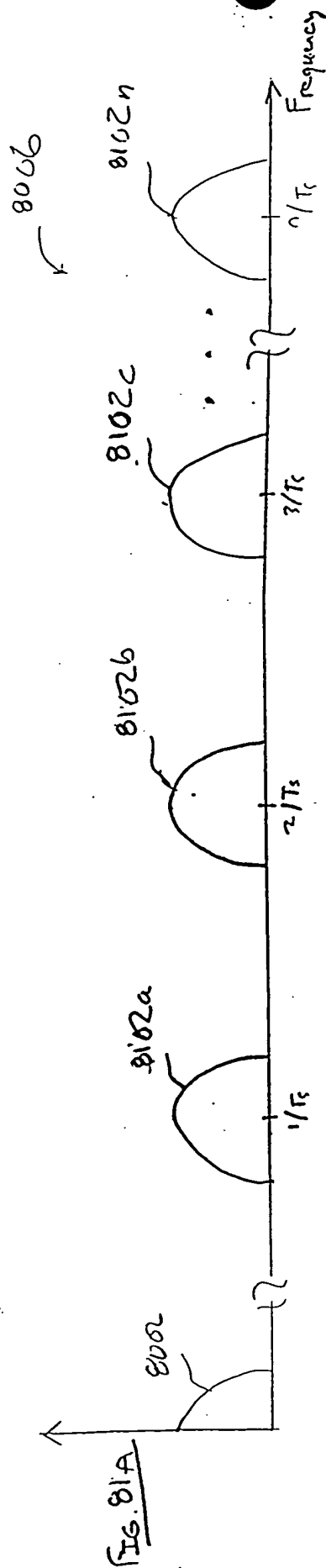
0044020 25252525

8001

8001

FIG. 80





8228

8202

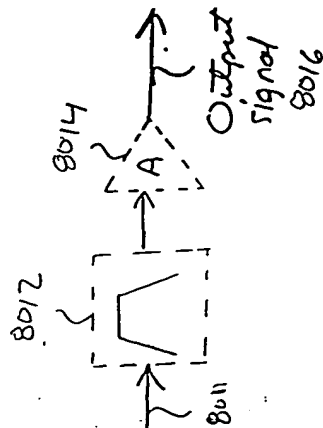
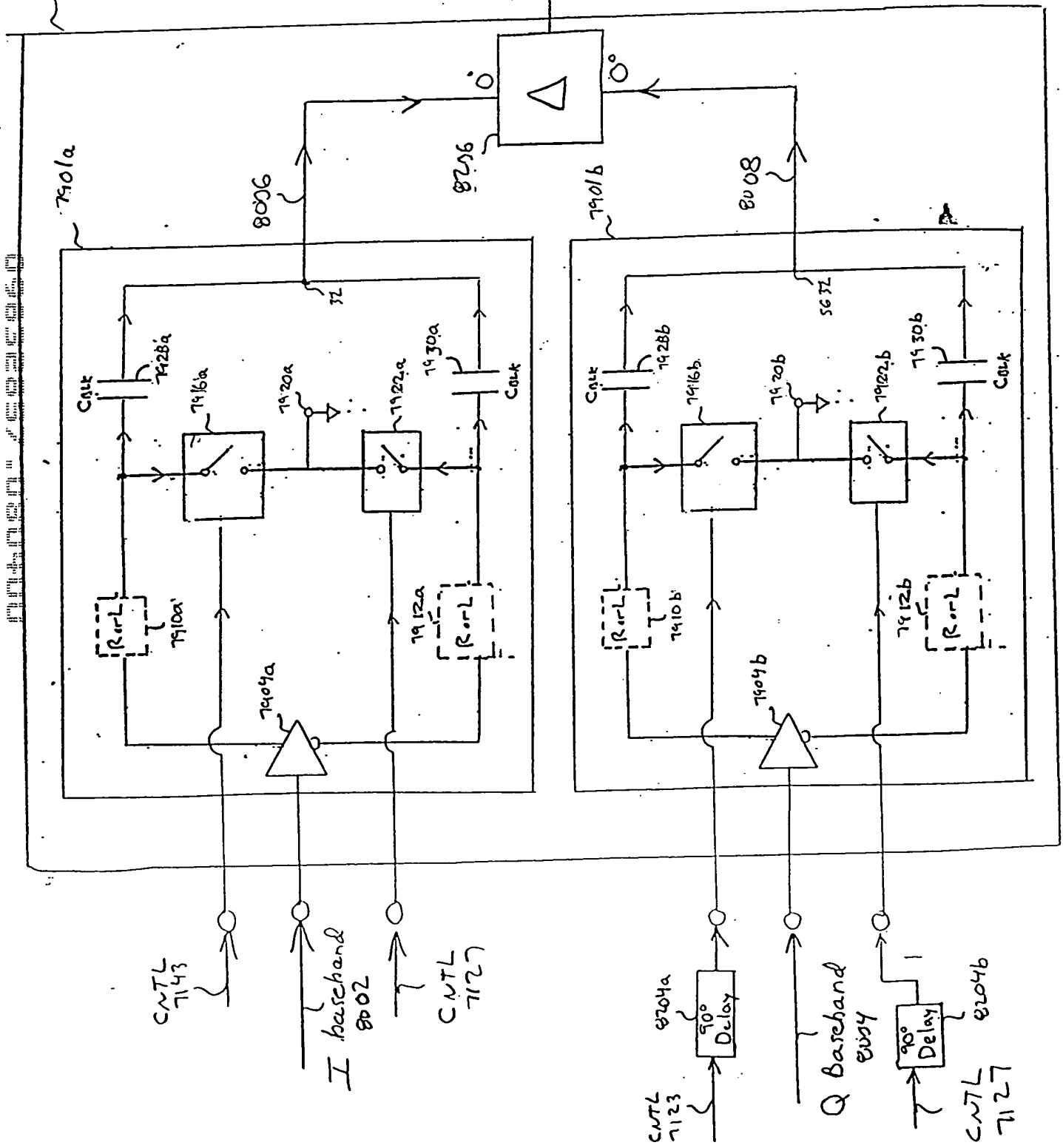


FIG. 82



8300

004030 / 00000000

8302

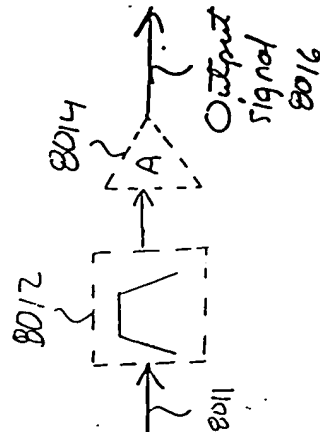
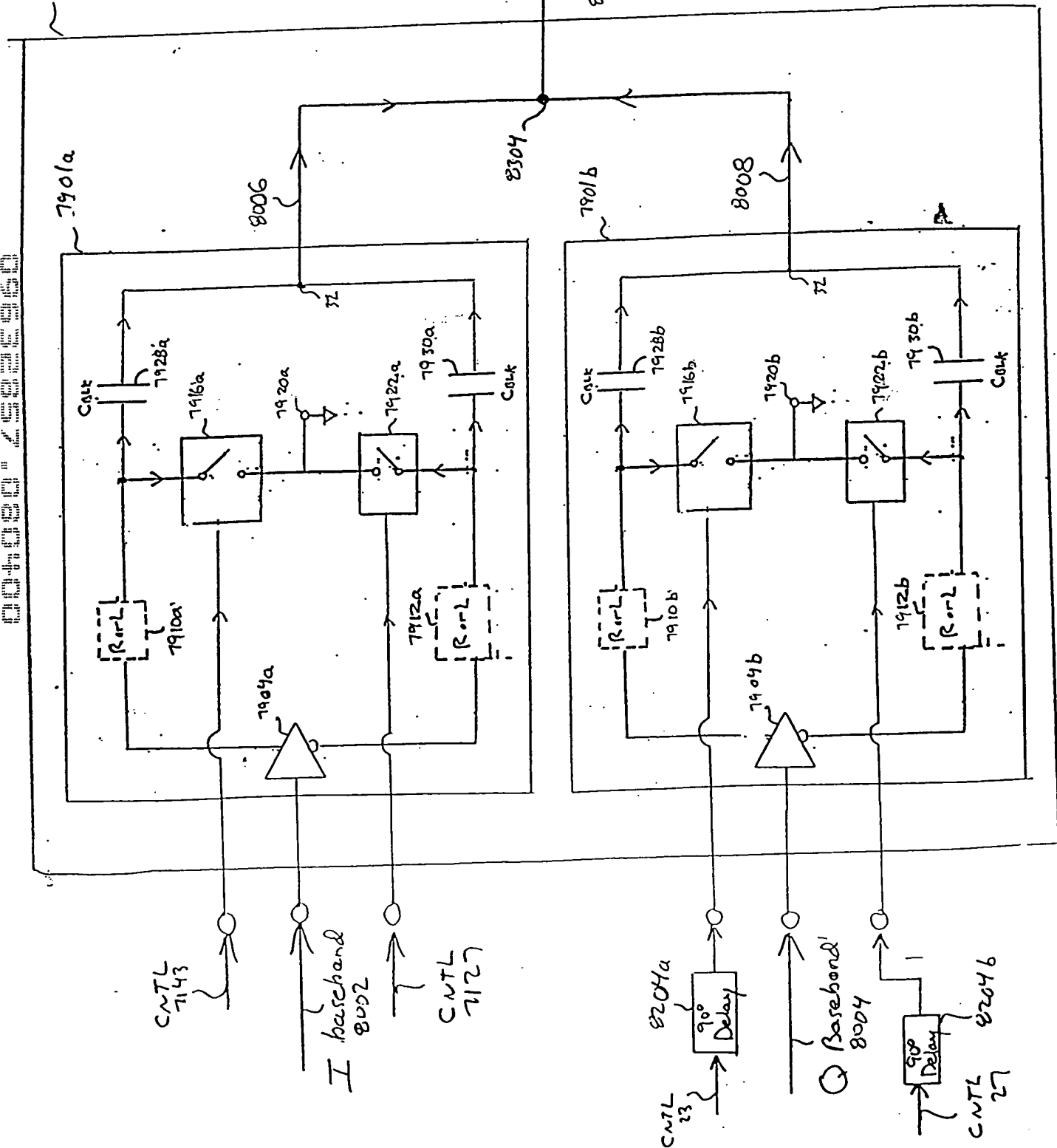


Fig. 83



004080 2532950

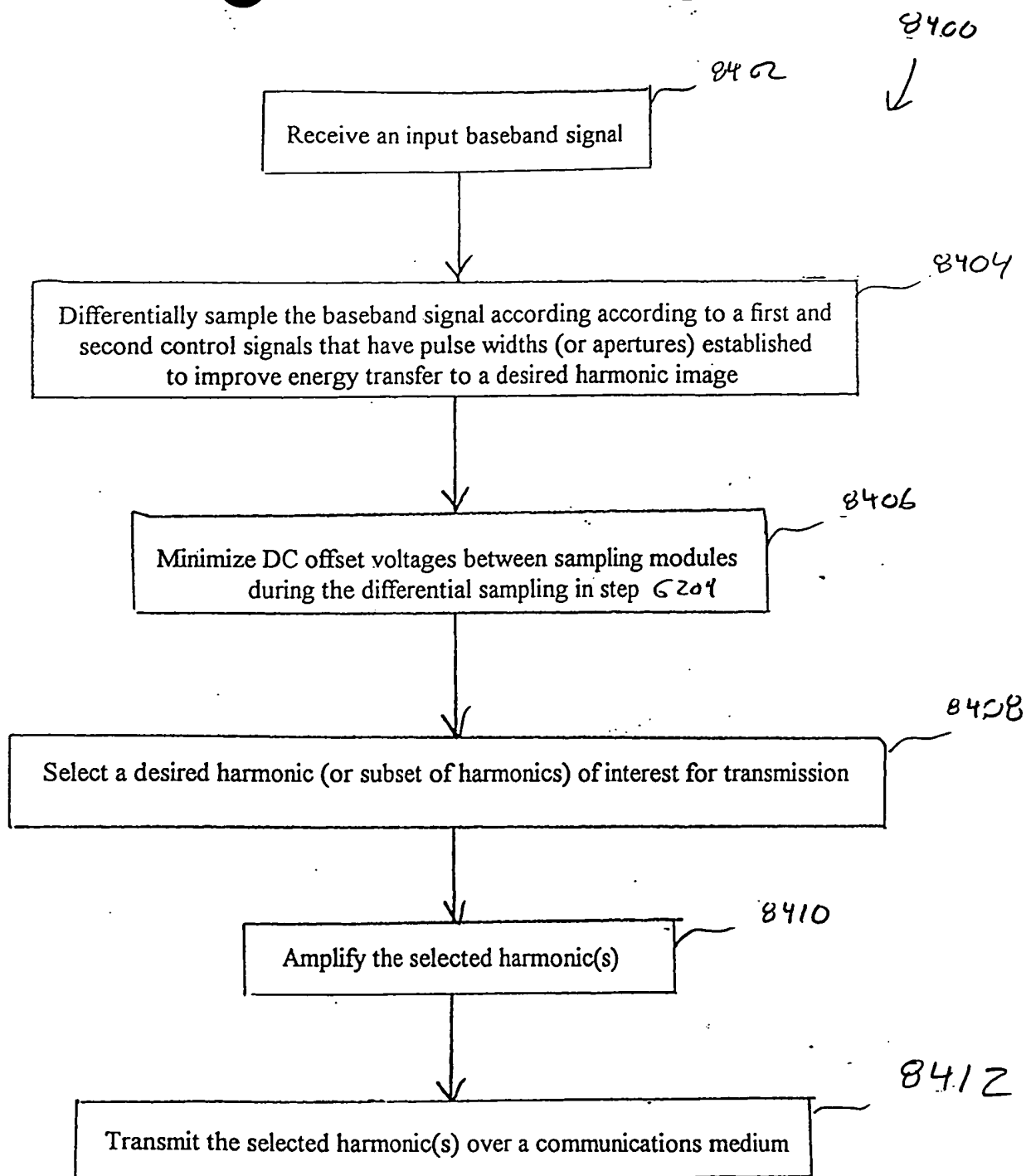


FIG. 84

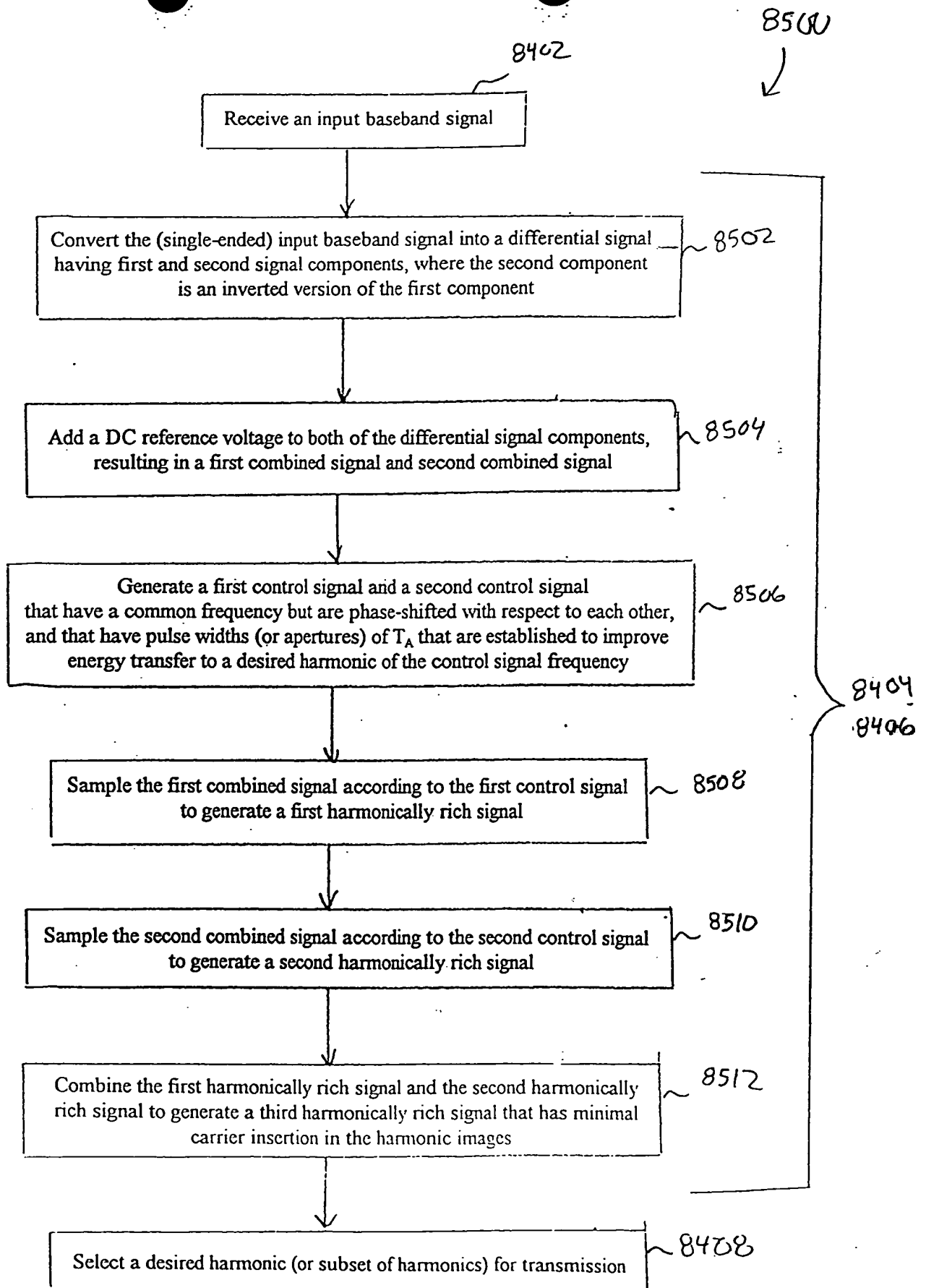


FIG. 85

004030 2633350

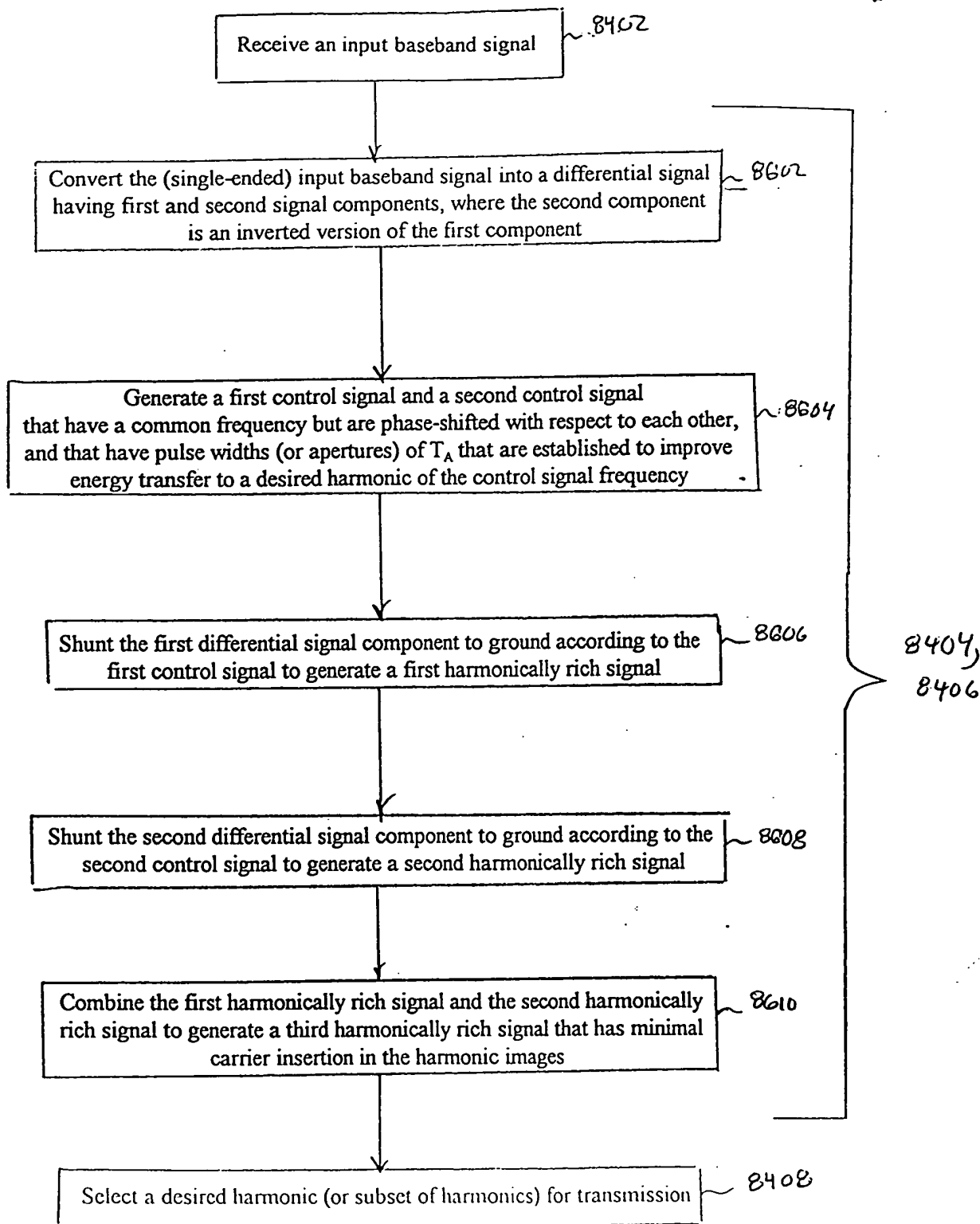


FIG. 26

Receive an I baseband signal and a Q baseband signal

Differentially sample the I baseband signal according to a first and second control signals that have pulse widths (or apertures) established to improve energy transfer to a desired harmonic image in the resulting I harmonically rich signal

Differentially sample the Q baseband signal according to a first and second control signals that have pulse widths (or apertures) established to improve energy transfer to a desired harmonic image in the resulting Q harmonically rich signal

Minimize DC offset voltages between sampling modules during the differential sampling steps

Combine the I harmonically rich signal and the Q harmonically rich signal to generate an IQ harmonically rich signal

Select a desired harmonic (or subset of harmonics) of interest for transmission

Amplify the selected harmonic(s)

Transmit the selected harmonic(s) over a communications medium

FIG. 87

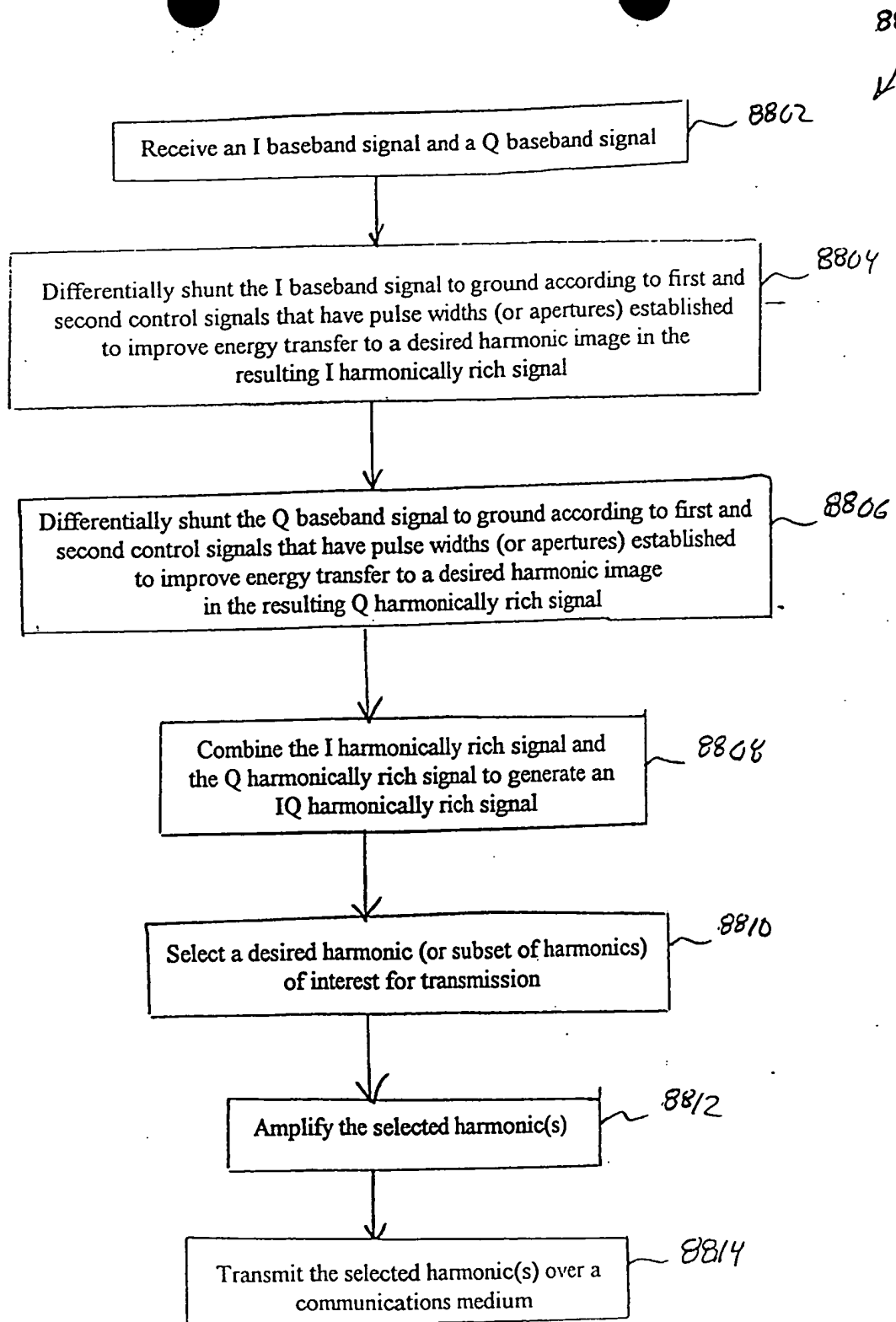


FIG. 88

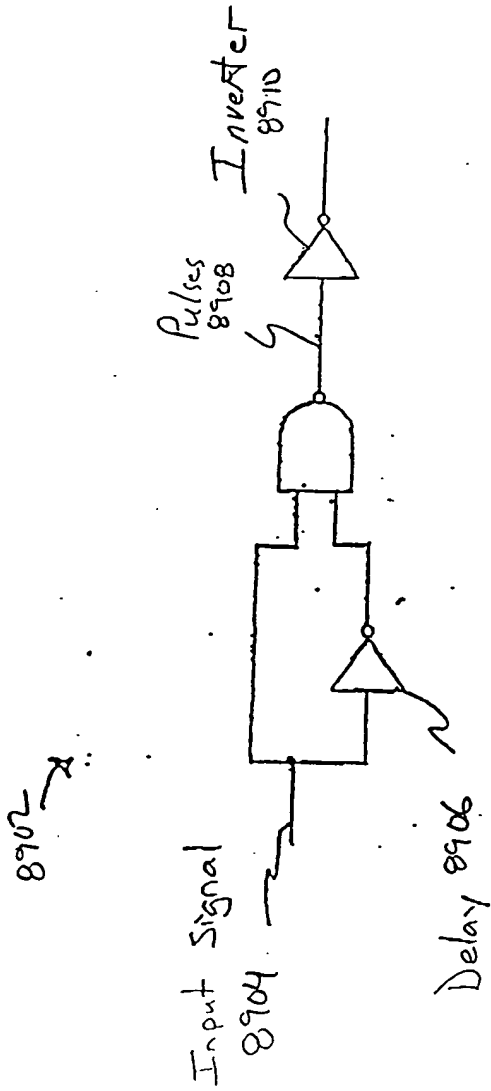


FIG. 89A

FIG. 89B

8904

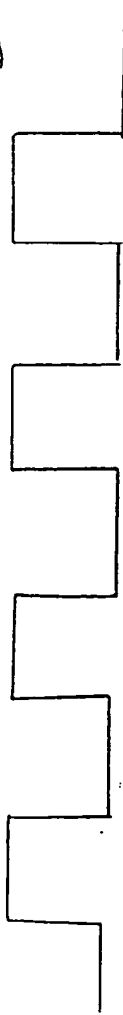


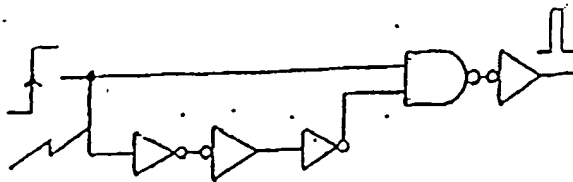
FIG. 89C

8908

$\rightarrow T_{pk}$



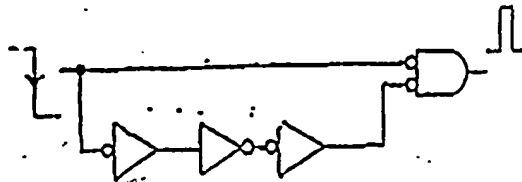
8912
↓



A. rising edge pulse generator

FIG. 89D

8916
↓



B. falling-edge pulse generator

FIG. 89E

004000 48828960

004020 403030

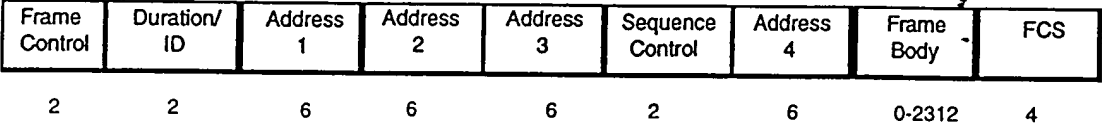


FIG. 92

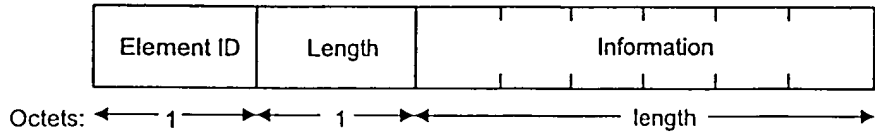


FIG. 93

004080" 4033E960

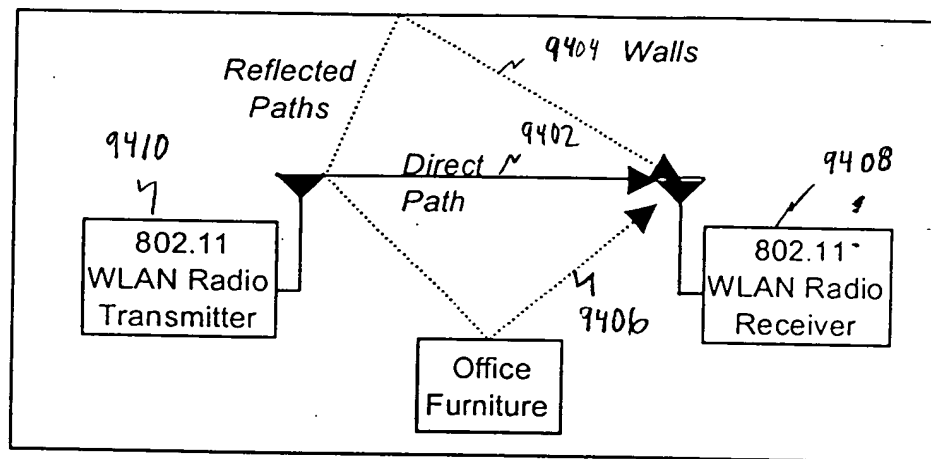
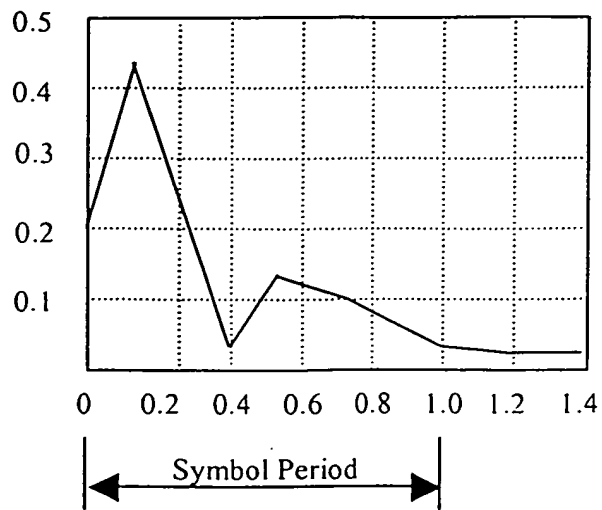


FIG. 94



100nsec
RMS Delay Spread

FIG. 95

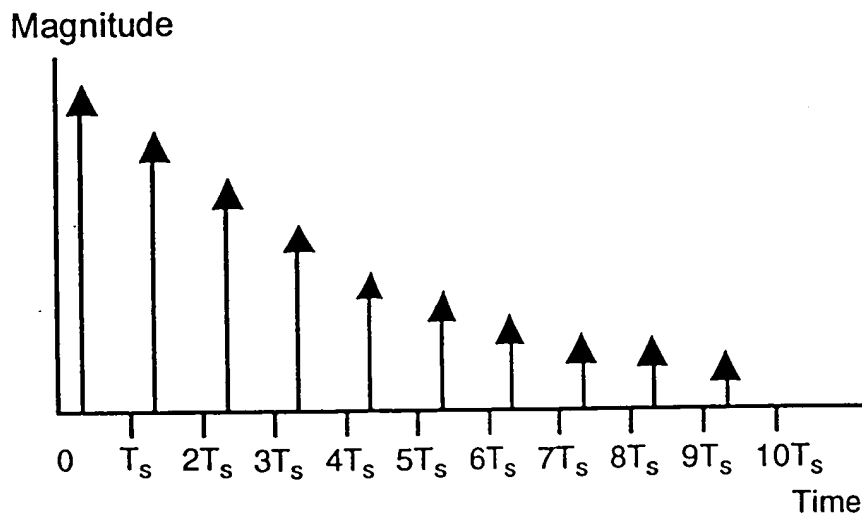


FIG. 96

004030 030400

WLAN CELL 9700

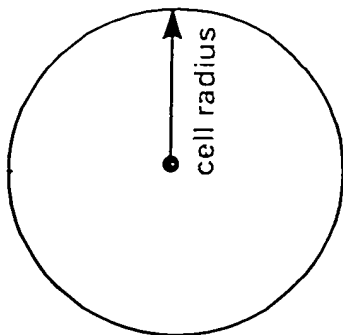


FIG. 97

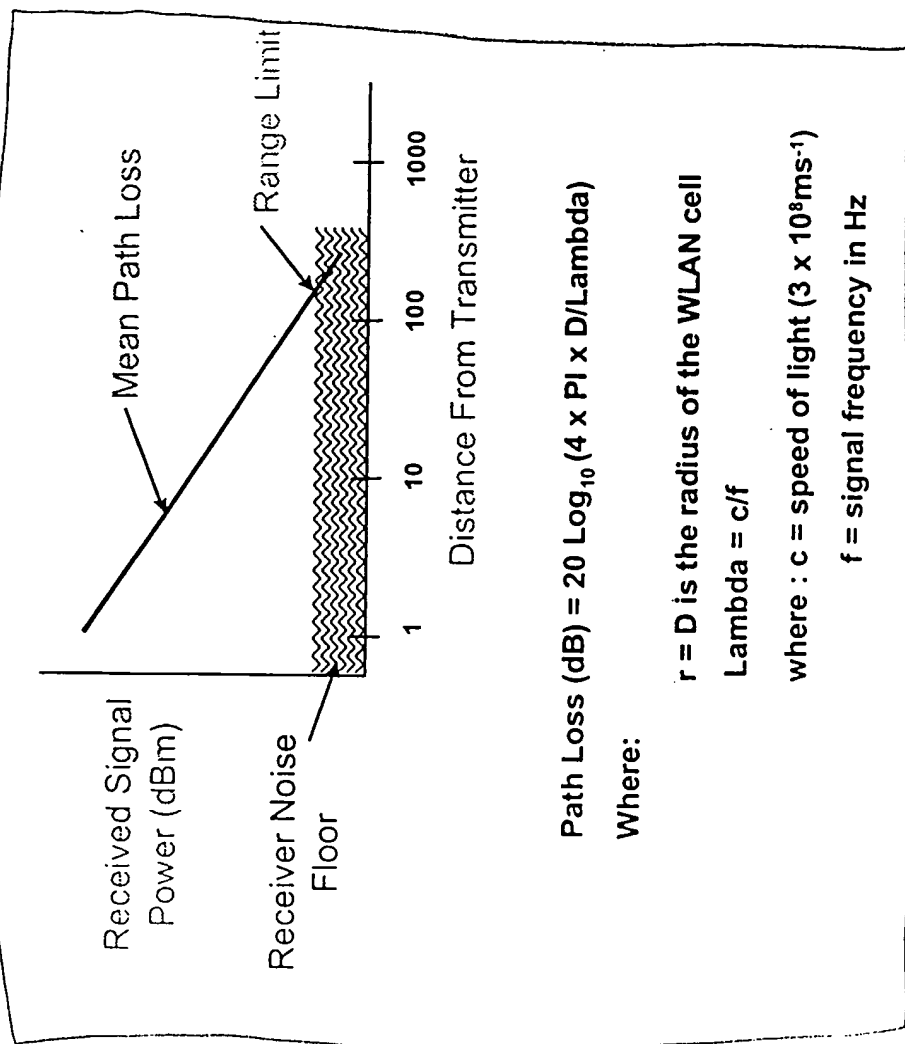


FIG. 98

Bit Error Rate of Coded Modulation

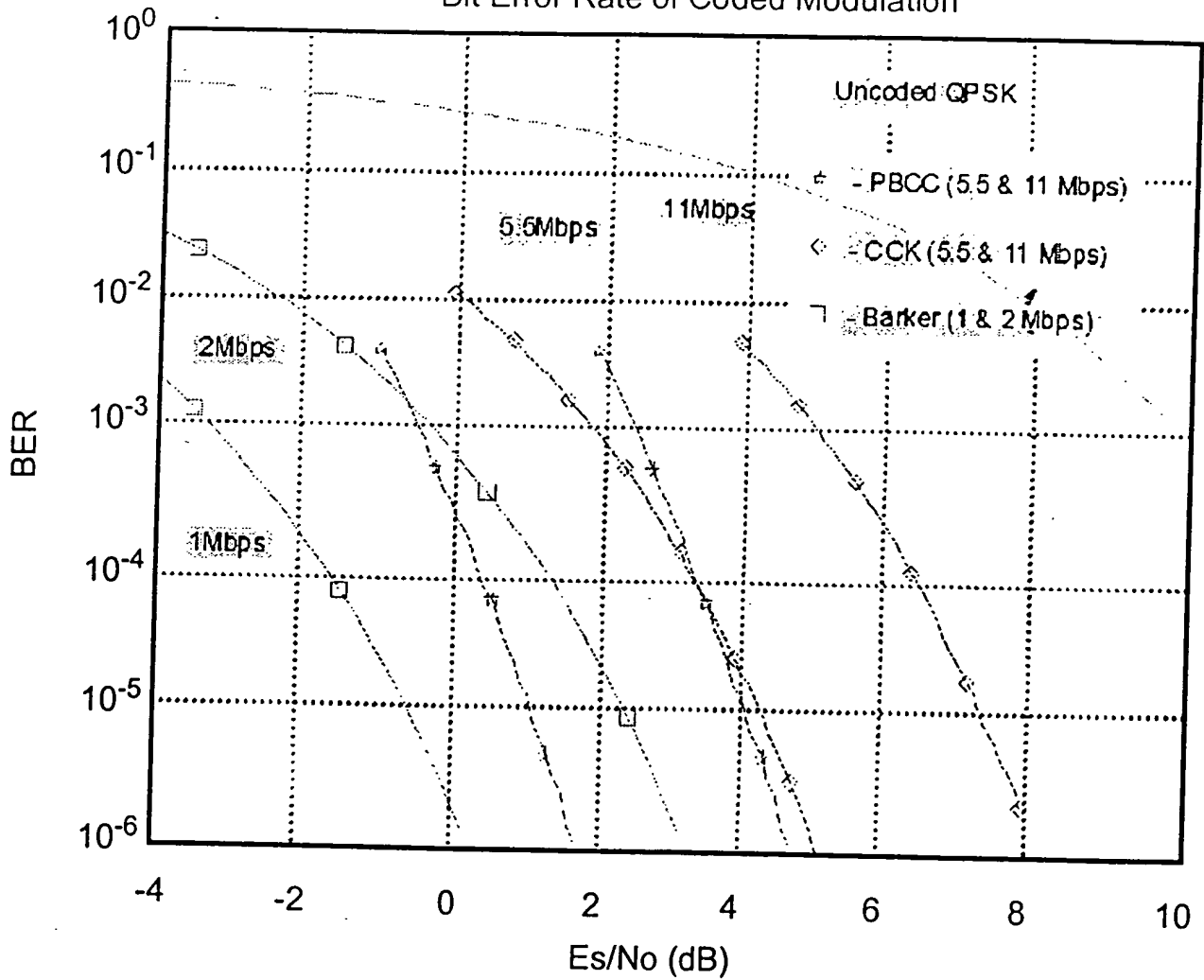


FIG. 99

The diagram illustrates a Basic Service Set (BSS) for 802.11 wireless networking. It is enclosed in a large dotted circle. At the center is an **802.11 Access Point**, which is labeled **Diversity** above it, indicating it uses multiple antennas for signal reception and transmission. Four **802.11 Mobile Station**s are connected to the Access Point. One of these stations, located at the bottom right, is specifically labeled **Single Antenna**, indicating it has only one antenna. The diagram shows the spatial distribution of devices within the BSS.

FIG. 100

10100

10102

FIG. 101A

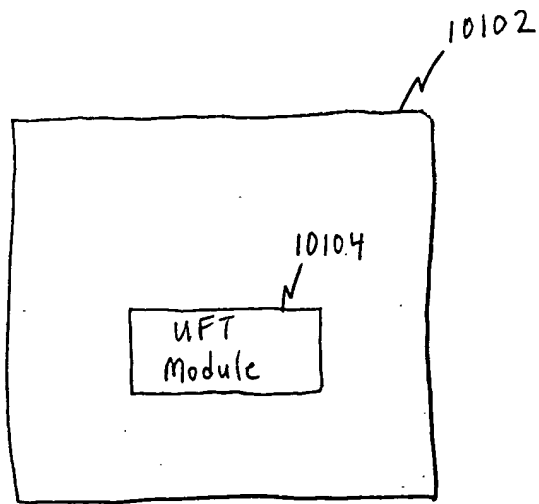
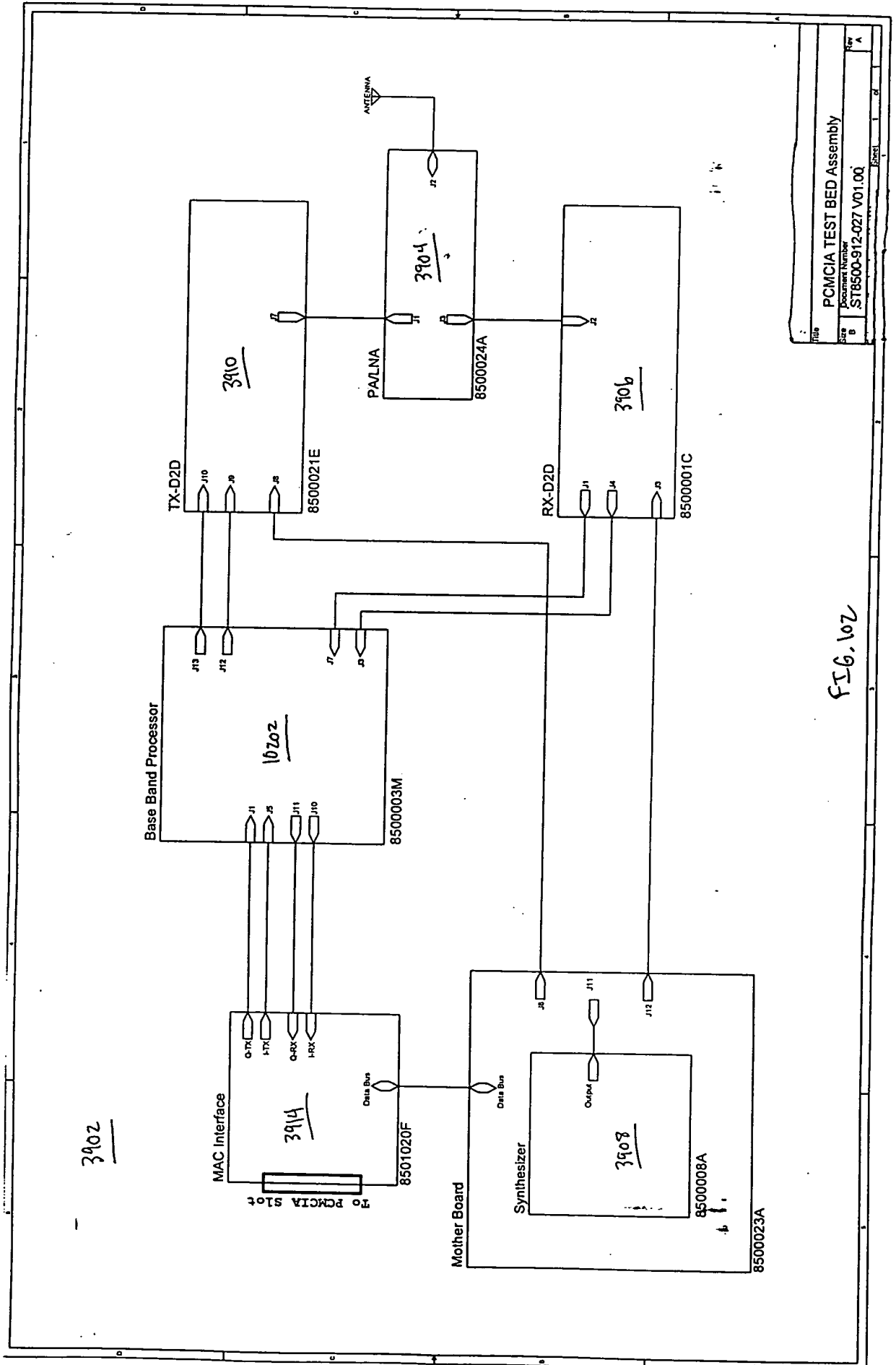


FIG. 101 B

004020" 4532E960

3902 3904 3906 3908



The diagram illustrates a multi-channel receiver system, labeled FIG. 103. It features three parallel processing channels, each enclosed in a dashed box. The top channel is for the I (In-phase) baseband signal, the middle for the Q (Quadrature) baseband signal, and the bottom for a third channel, possibly for a different frequency or polarization. Each channel starts with an LNA (Low Noise Amplifier) block, followed by a UFT (Ultra-Frequency Tuning) Module. The UFT Modules are connected to various passive components, including resistors (e.g., 10330, 10332, 10334, 10336, 10338, 10340, 10342, 10344, 10346, 10348, 10350, 10352, 10354, 10356, 10358, 10360, 10362, 10364, 10366, 10368, 10370) and capacitors (e.g., 10326, 10328, 10332, 10334, 10336, 10338, 10340, 10342, 10344, 10346, 10348, 10350, 10352, 10354, 10356, 10358, 10360, 10362, 10364, 10366, 10368, 10370). The outputs of the UFT Modules are combined in a summing junction (represented by a triangle with '+' and '-' signs) to produce the final baseband output signals: 'I Baseband Output Signal 10384' and 'Q Baseband Output Signal 10386'. The system is powered by a common power supply (10300) and ground (10302). Various other components and connections are labeled with reference numerals, including 10304, 10306, 10308, 10310, 10312, 10314, 10316, 10318, 10320, 10322, 10324, 10326, 10328, 10330, 10332, 10334, 10336, 10338, 10340, 10342, 10344, 10346, 10348, 10350, 10352, 10354, 10356, 10358, 10360, 10362, 10364, 10366, 10368, 10370, 10372, 10374, 10376, 10378, 10380, 10382, 10384, 10386, 10388, 10390, 10392, 10394, 10396, 10398, 10400, 10402, 10404, 10406, 10408, 10410, 10412, 10414, 10416, 10418, 10420, 10422, 10424, 10426, 10428, 10430, 10432, 10434, 10436, 10438, 10440, 10442, 10444, 10446, 10448, 10450, 10452, 10454, 10456, 10458, 10460, 10462, 10464, 10466, 10468, 10470, 10472, 10474, 10476, 10478, 10480, 10482, 10484, 10486, 10488, 10490, 10492, 10494, 10496, 10498, 10500.

FIG. 103

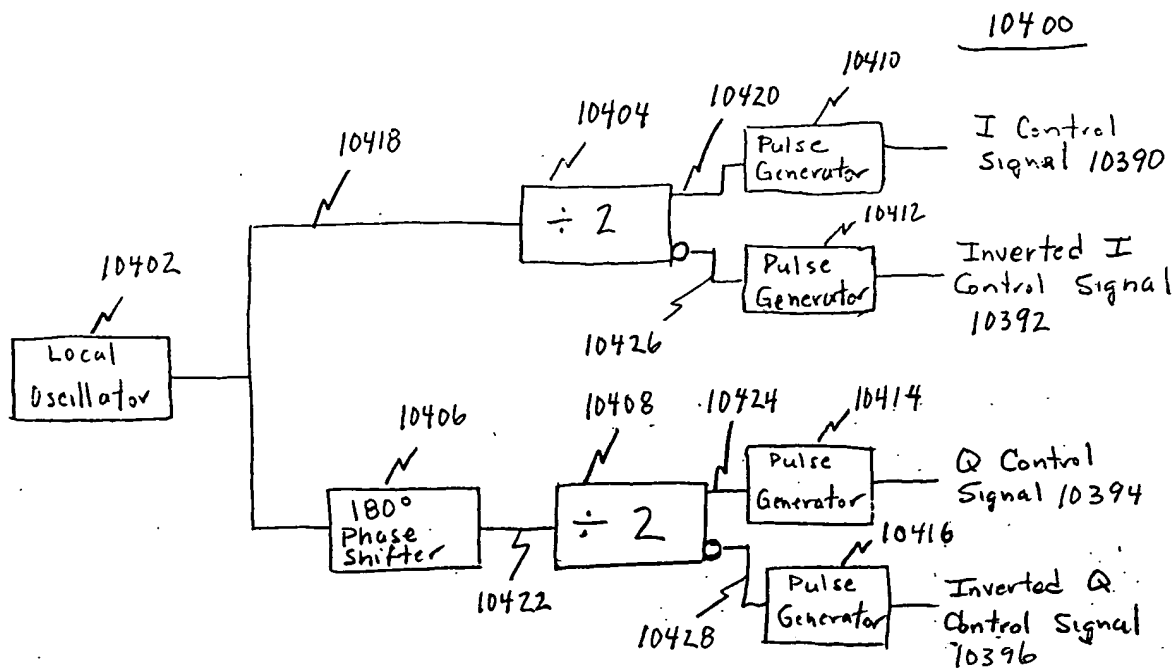


FIG. 104

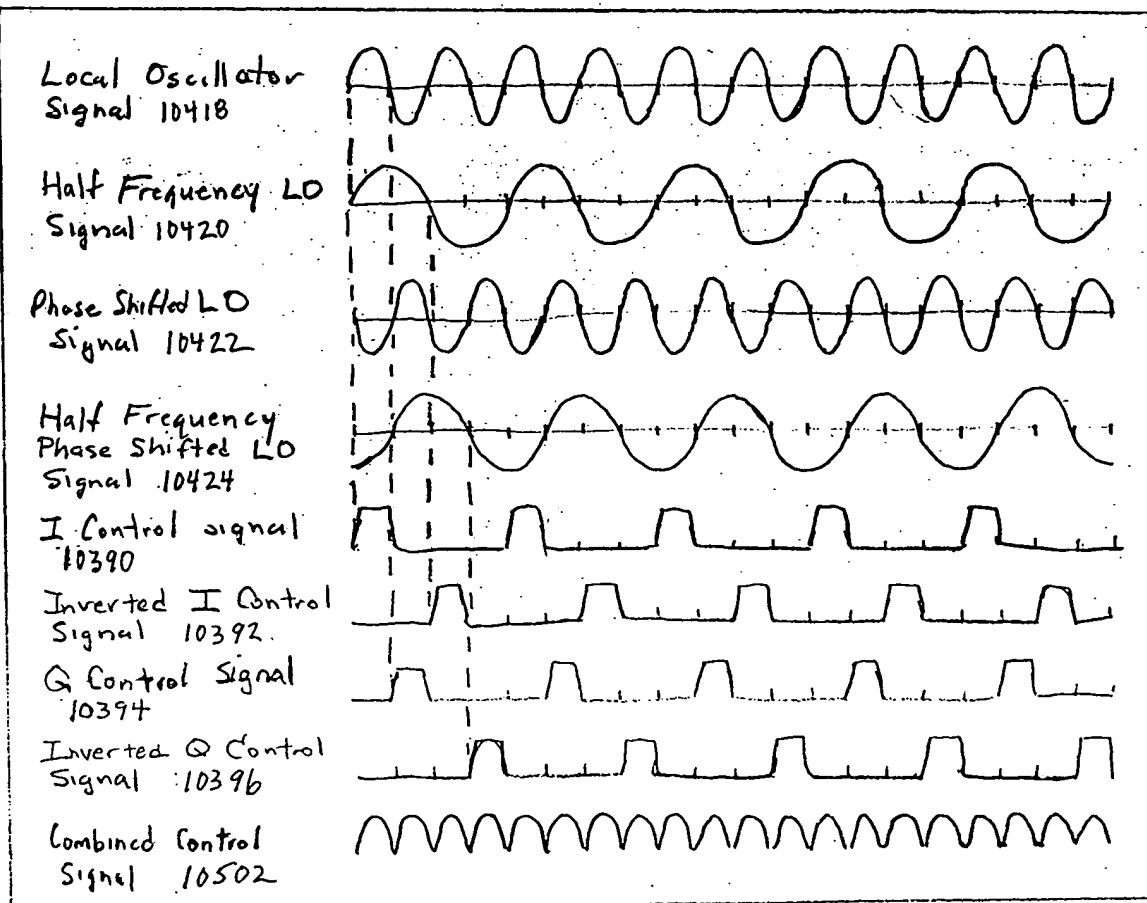


FIG. 105

(A) IQDEMOD PULSE RELATIONSHIPS TO INPUT RF CARRIER

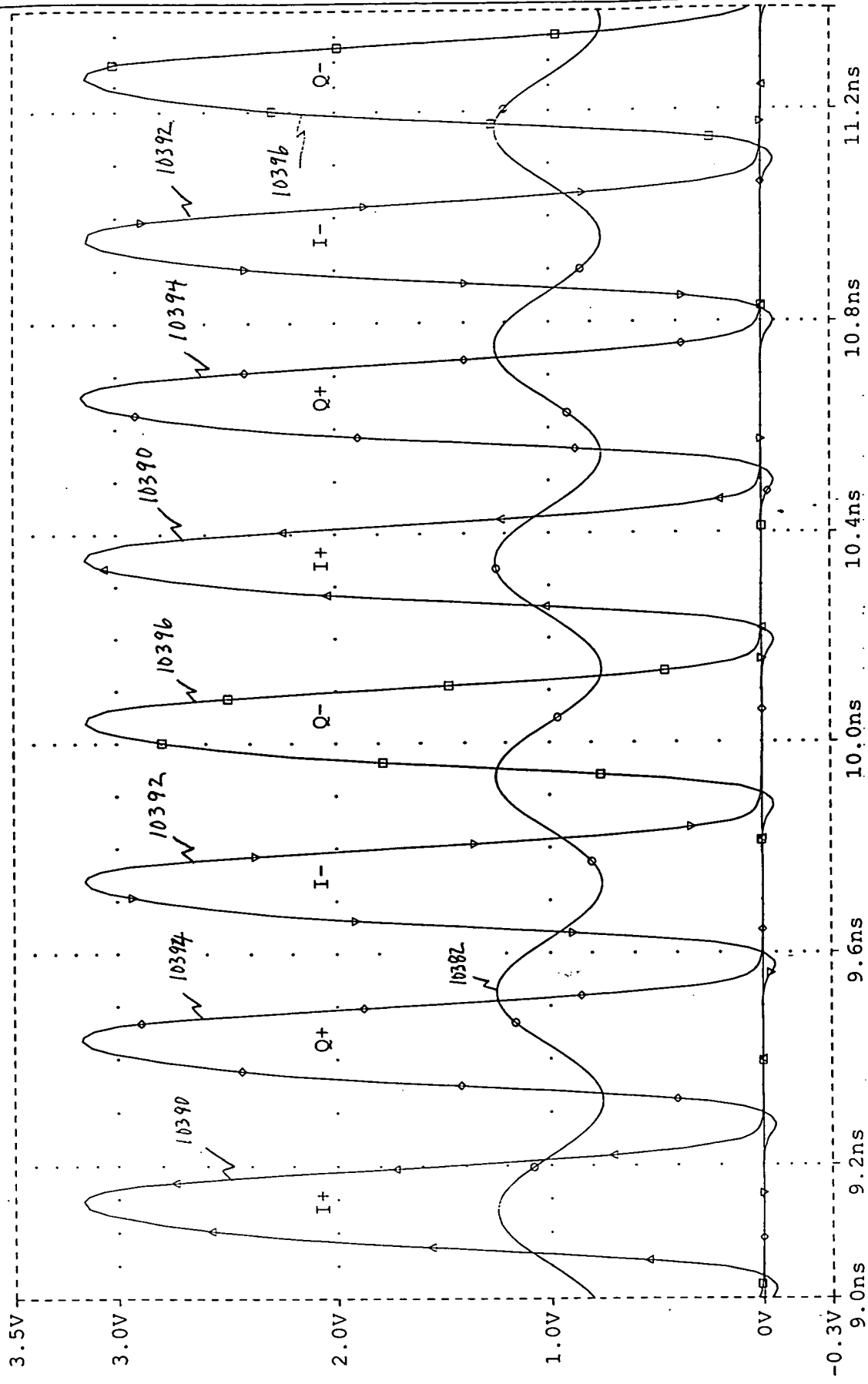


FIG. 106

103 00

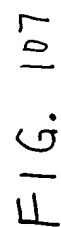
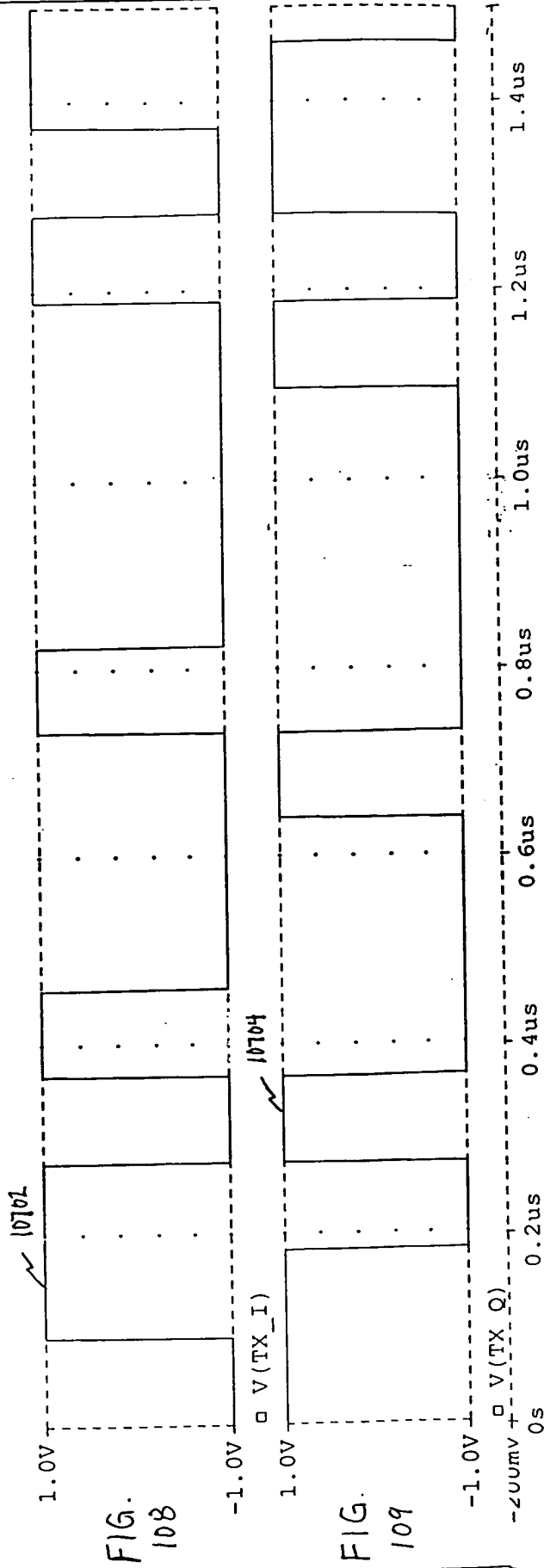
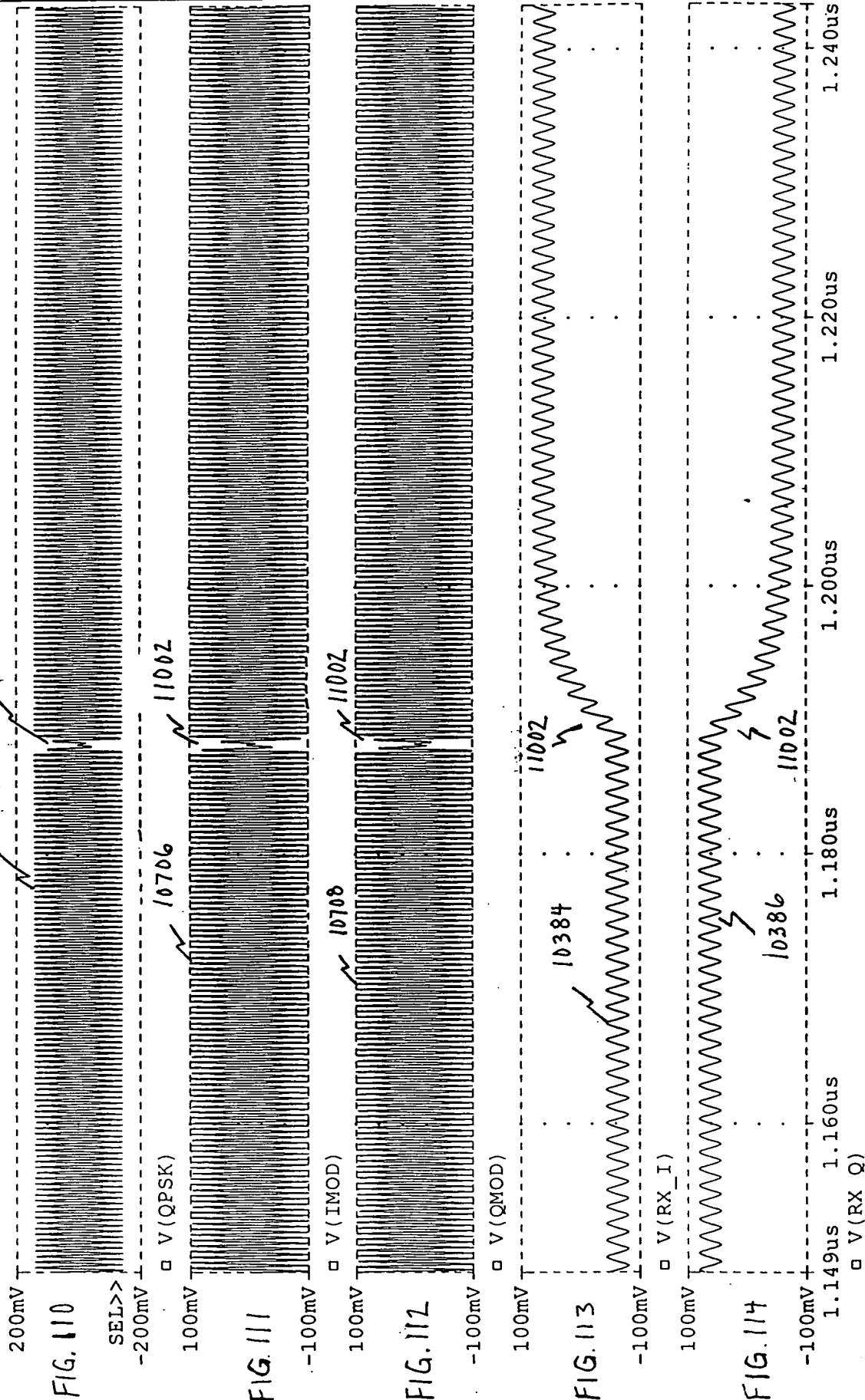


FIG. 107

(A) IQDEMOD SHOWING TIME RELATIONSHIP OF TX. I AND Q DATA

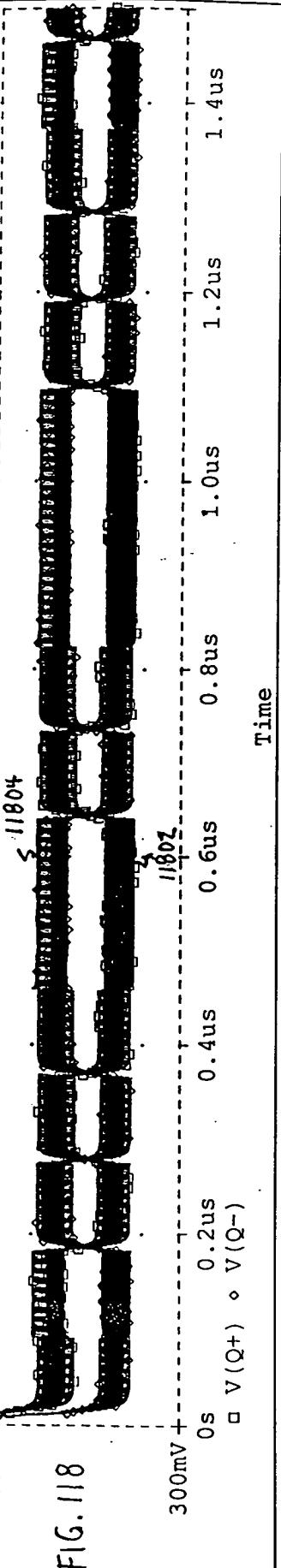
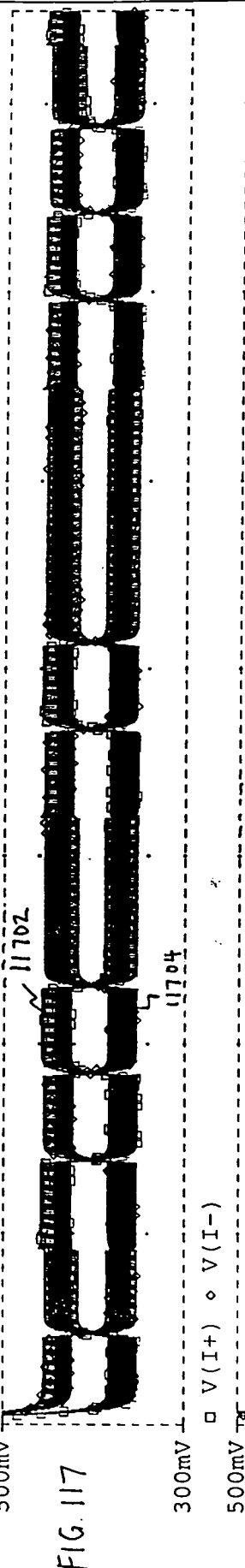
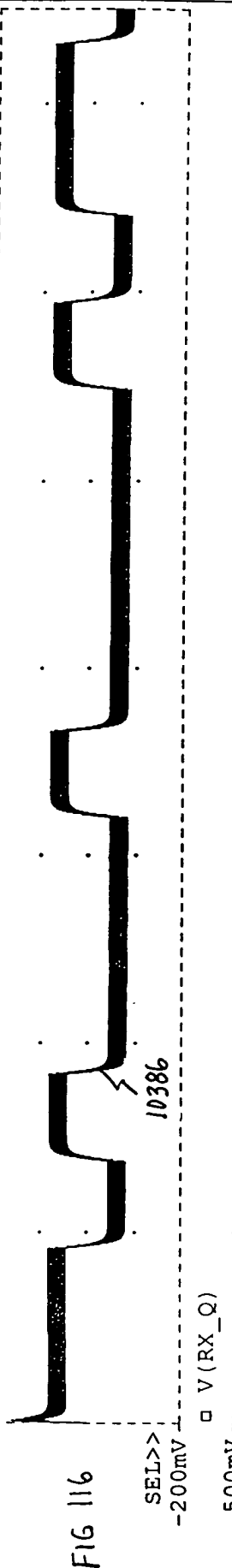
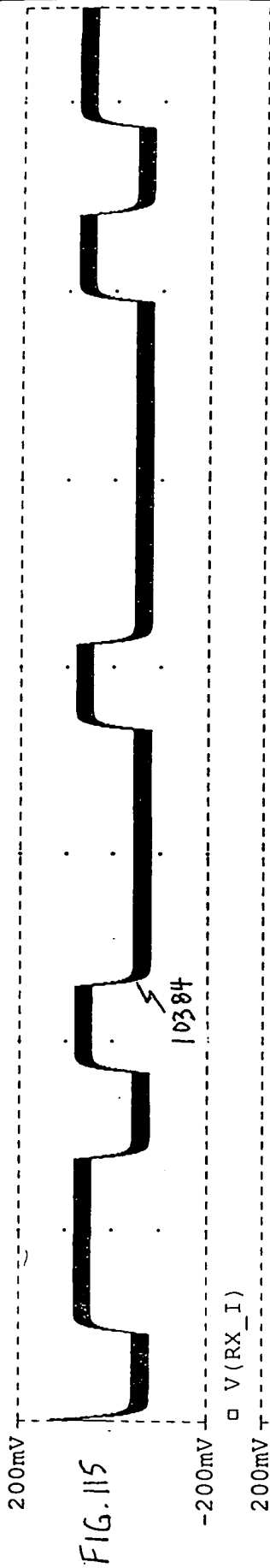


(B) IQDEMOD SHOWING QPSK MOD OUTPUT (TOP) WITH IMOD AND QMOD AND I AND Q DATA (BOTTOM)



Time

(B) IQDEMOD RELATIONSHIP OF I AND Q RECEIVED DATA DIFFERENTIAL(BOTTOM) AND SINGLE ENDED AFTER DIFF AMP...



004037-030400

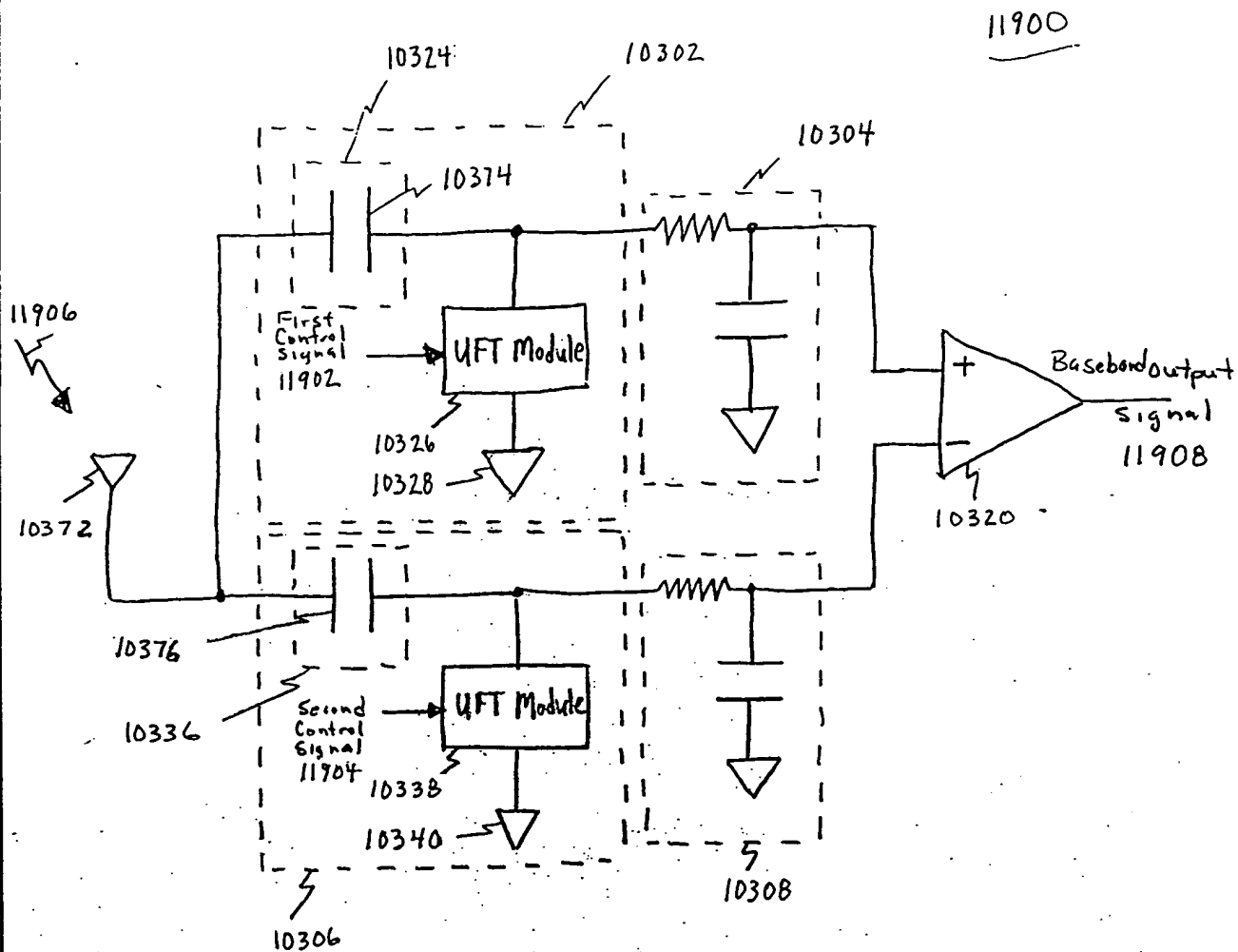


FIG. 119

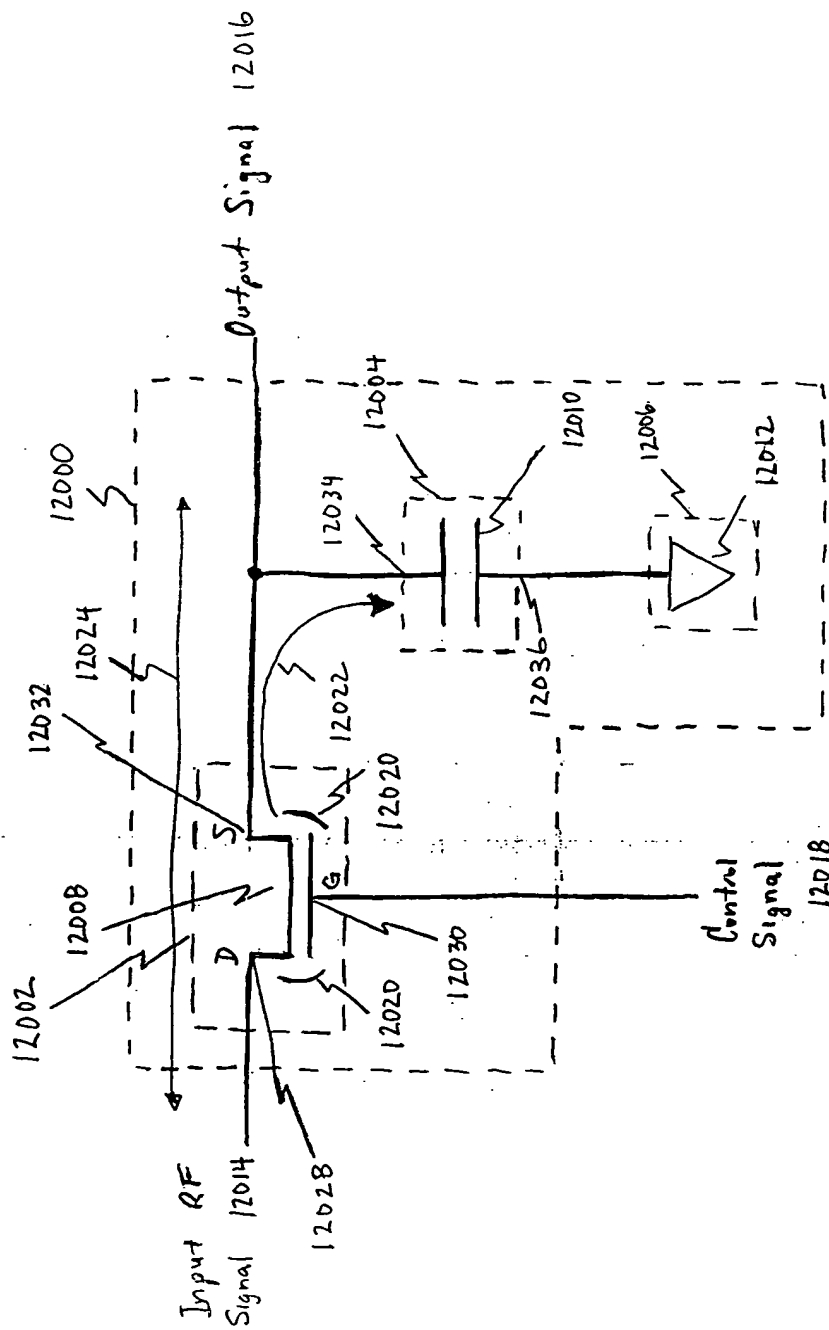


FIG. 120

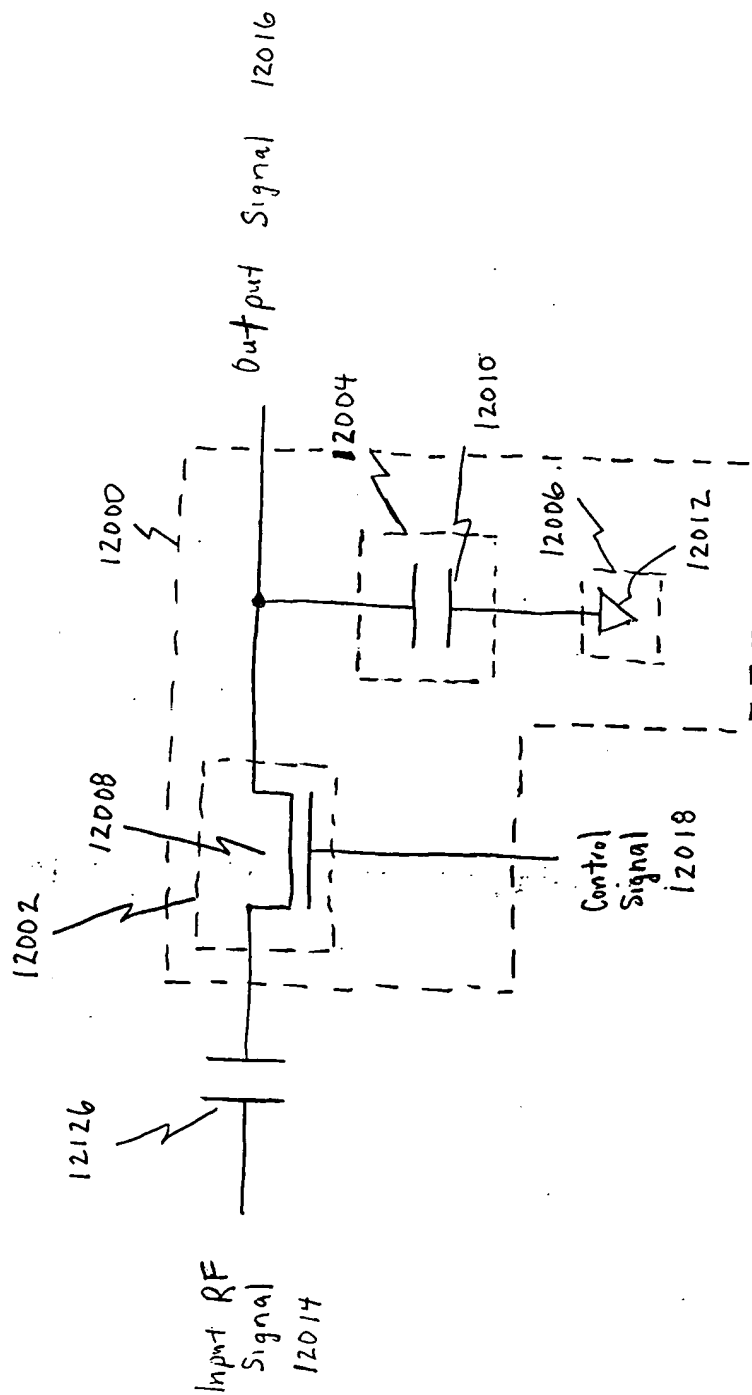


FIG. 121

004030.2532E950

12200

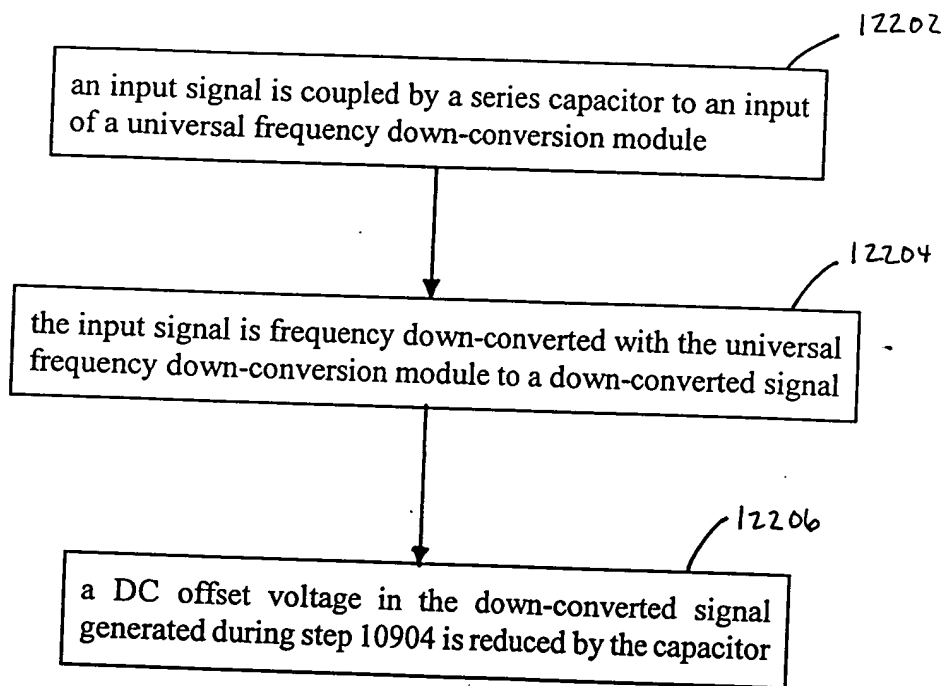


FIG. 122

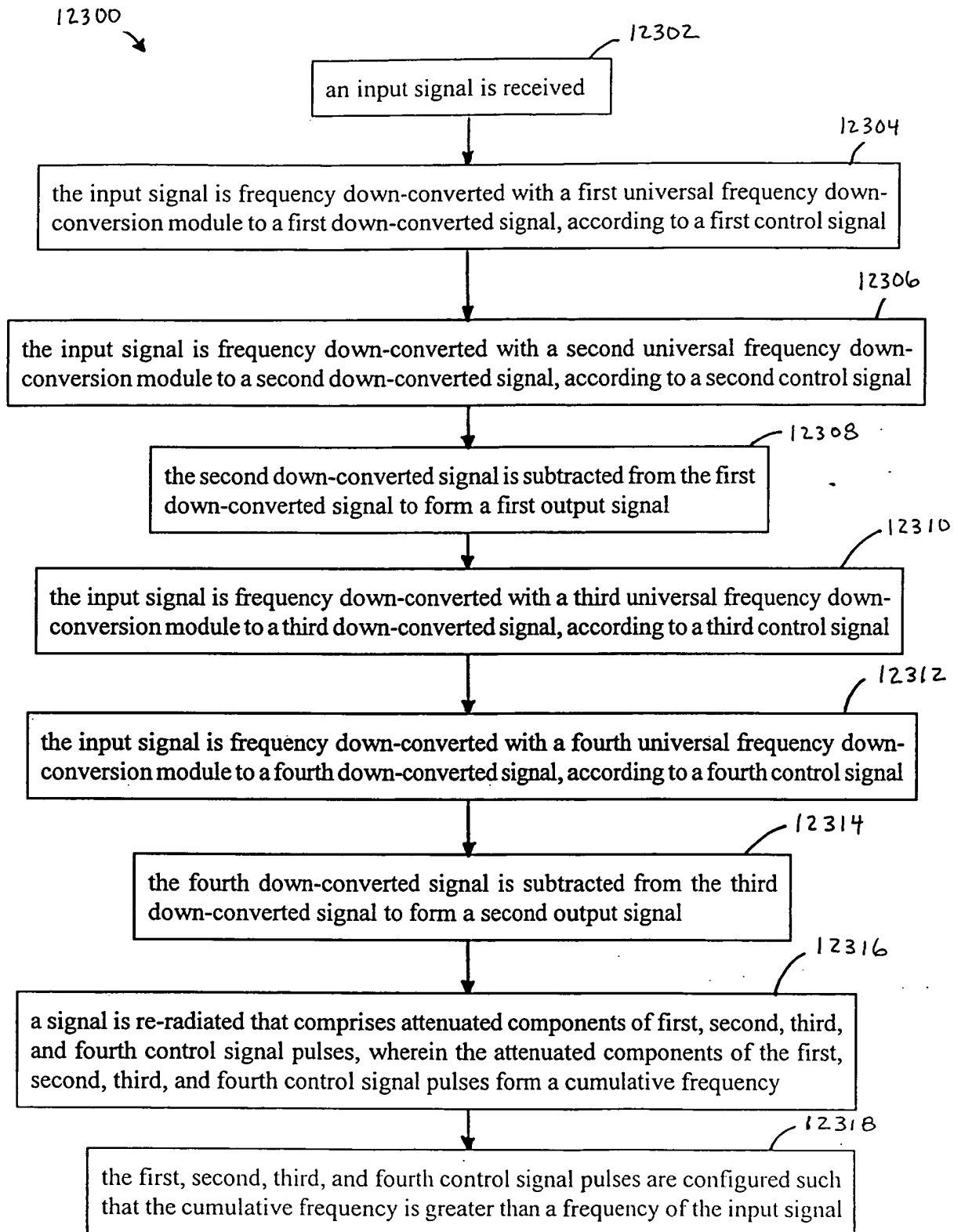


FIG. 123

09632857-080400

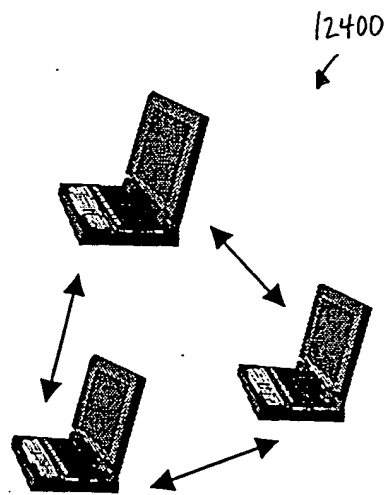


FIG. 124

09632657.080400

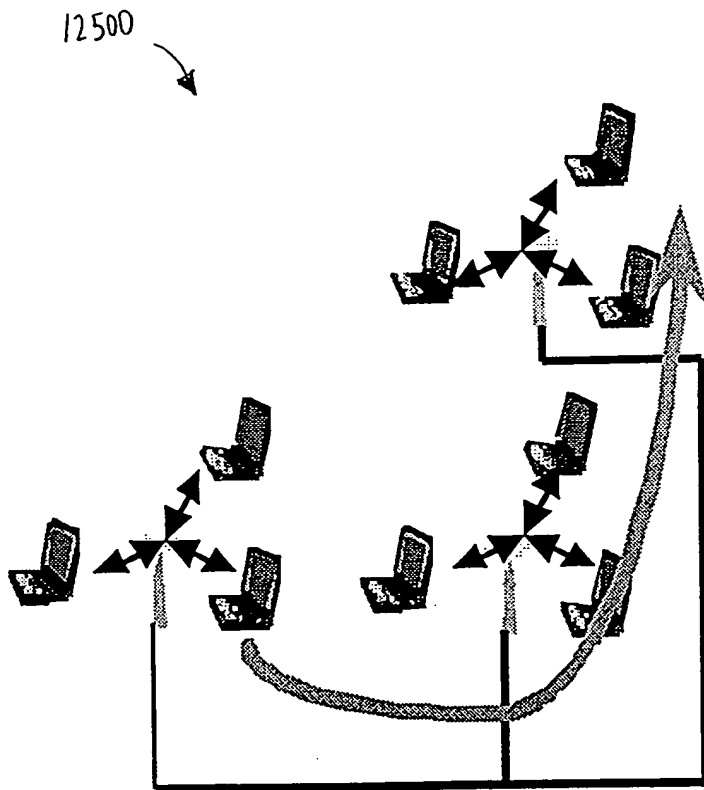


FIG. 125

004030 2525960

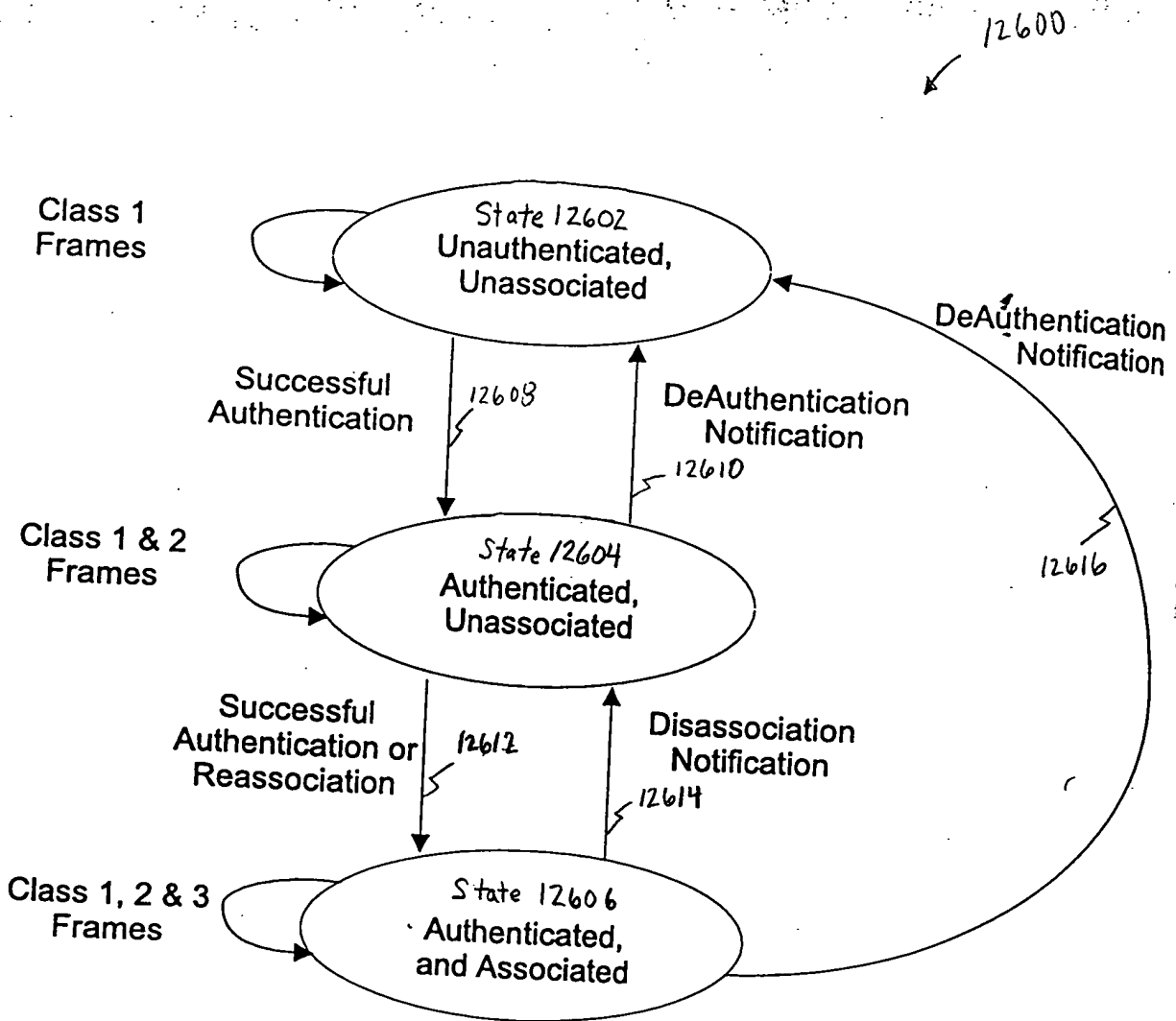


FIG. 126

004020" 25335960

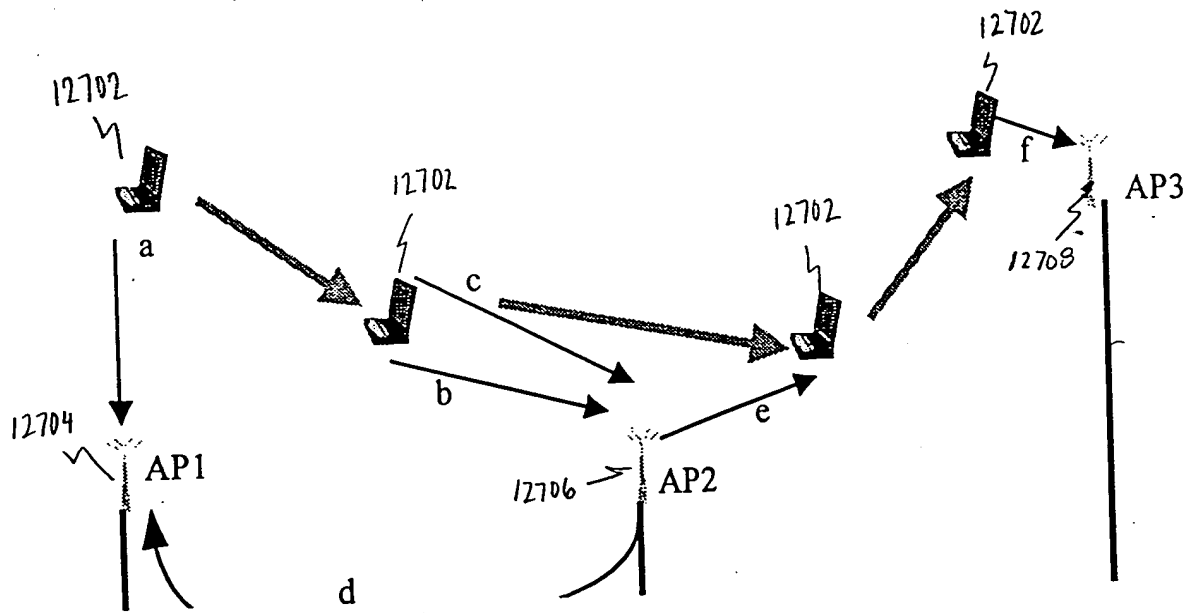


FIG. 127

004000/5822960 09032857 000400

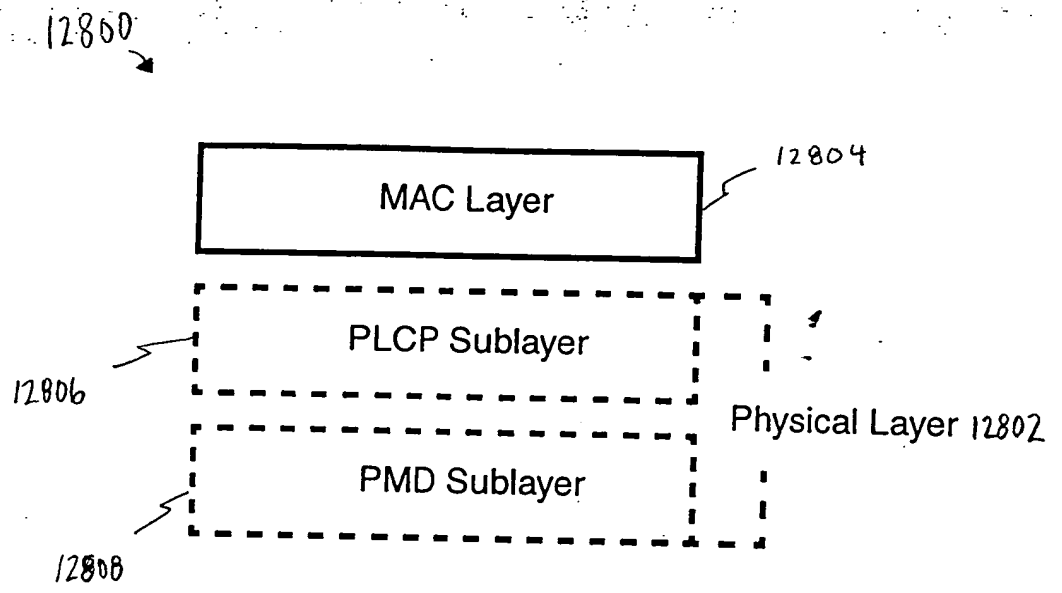


FIG. 128A

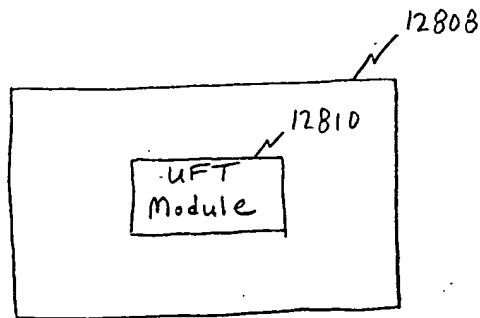


FIG. 128B

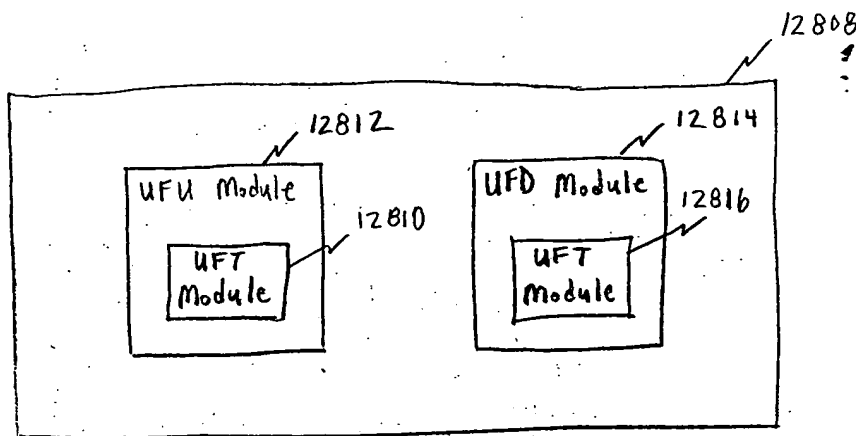


FIG. 128C

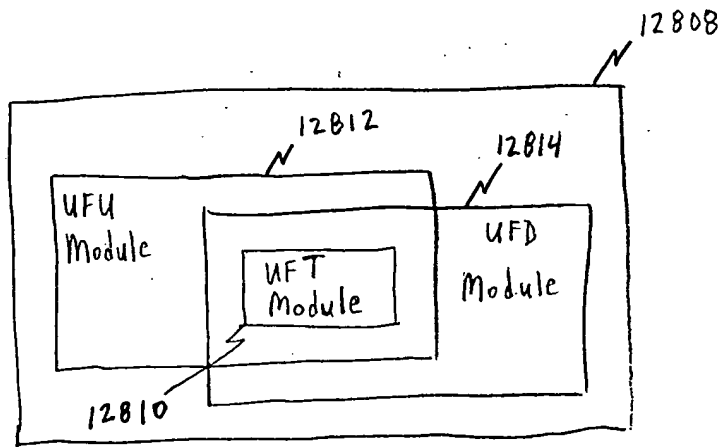


FIG. 128D

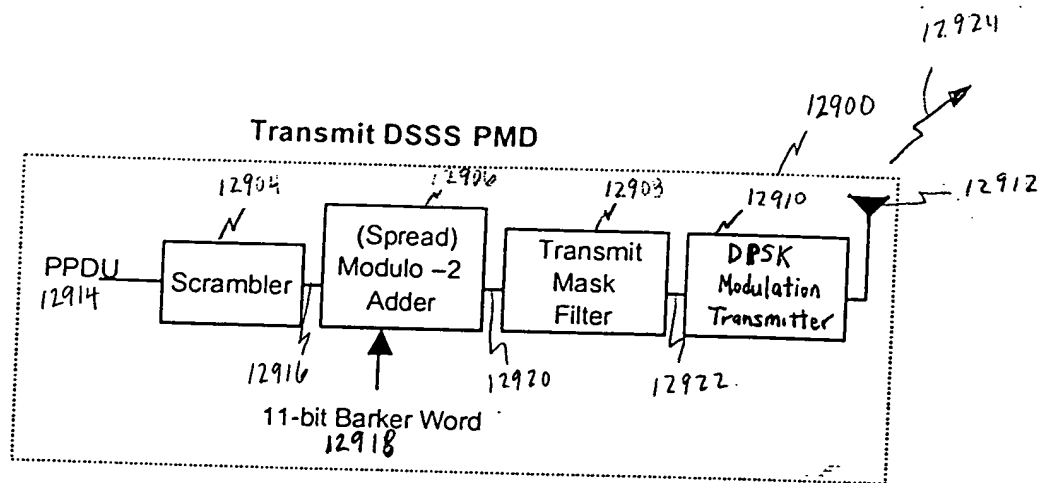


FIG. 129A

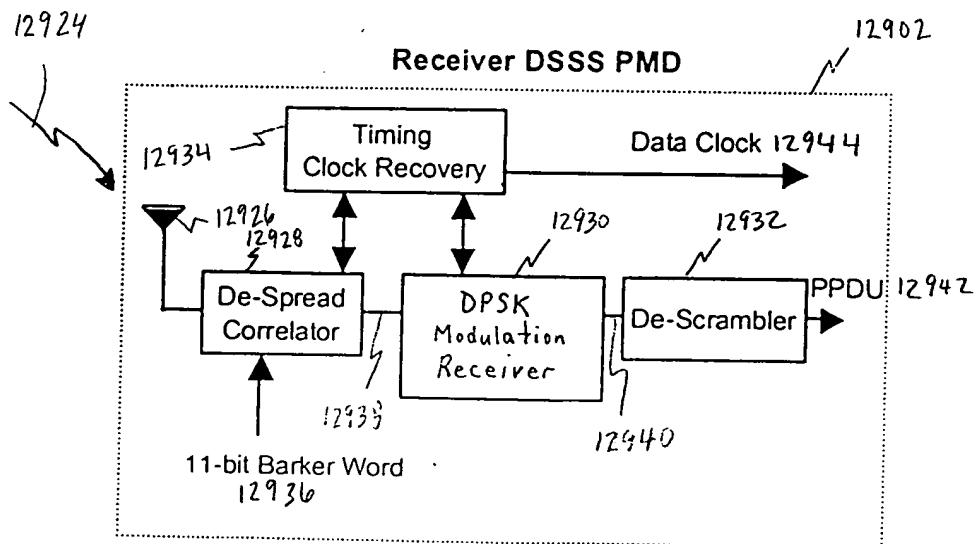


FIG. 129B

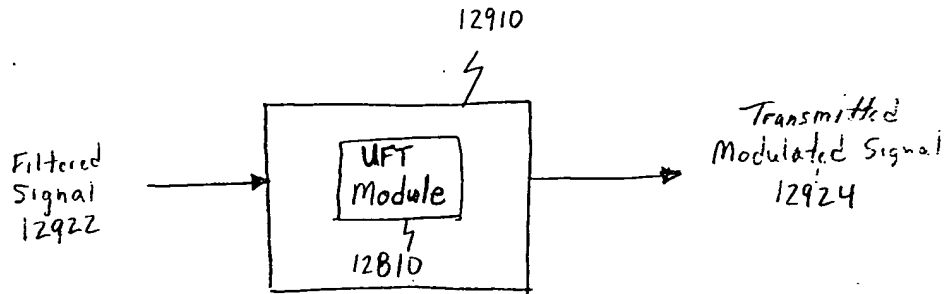


FIG. 129C

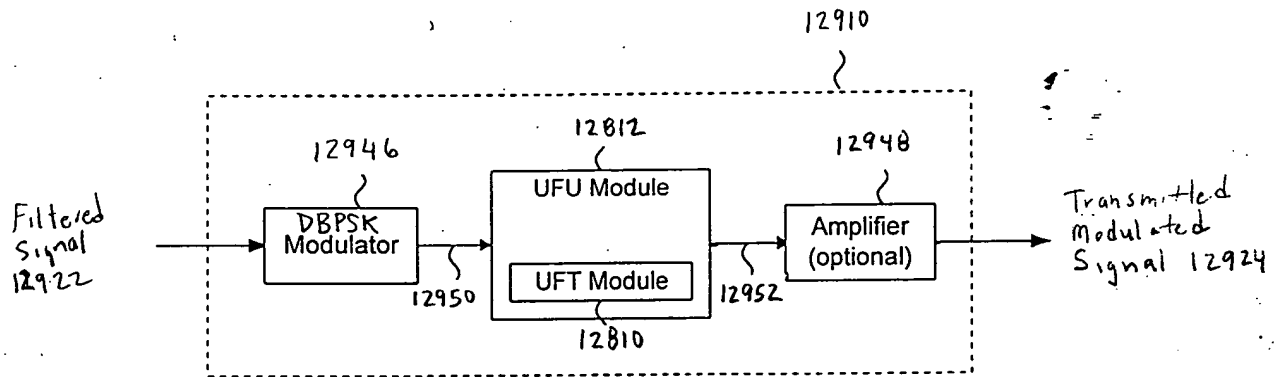


FIG. 129D

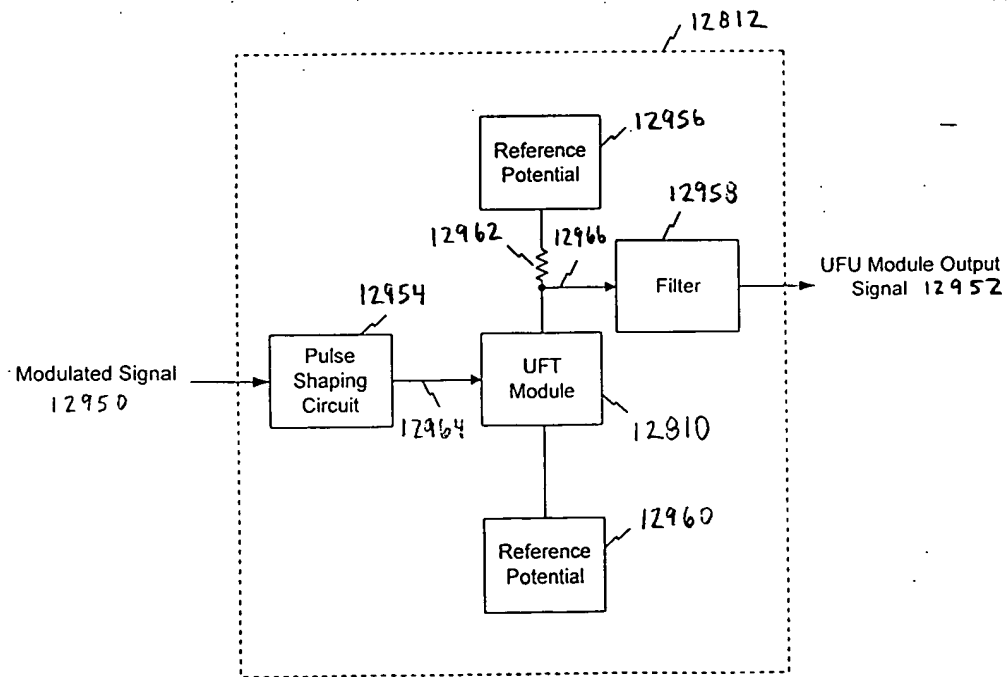


FIG. 129E

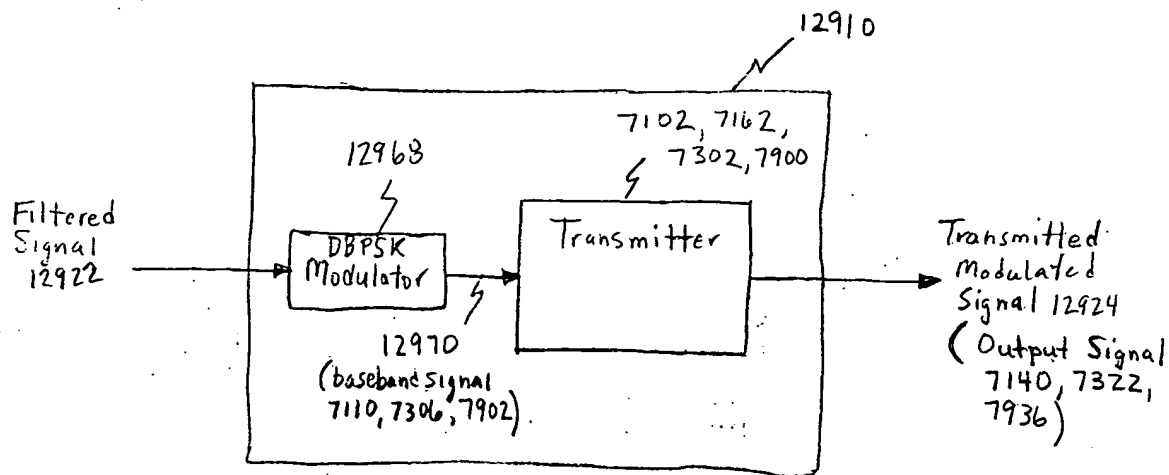


FIG. 129F

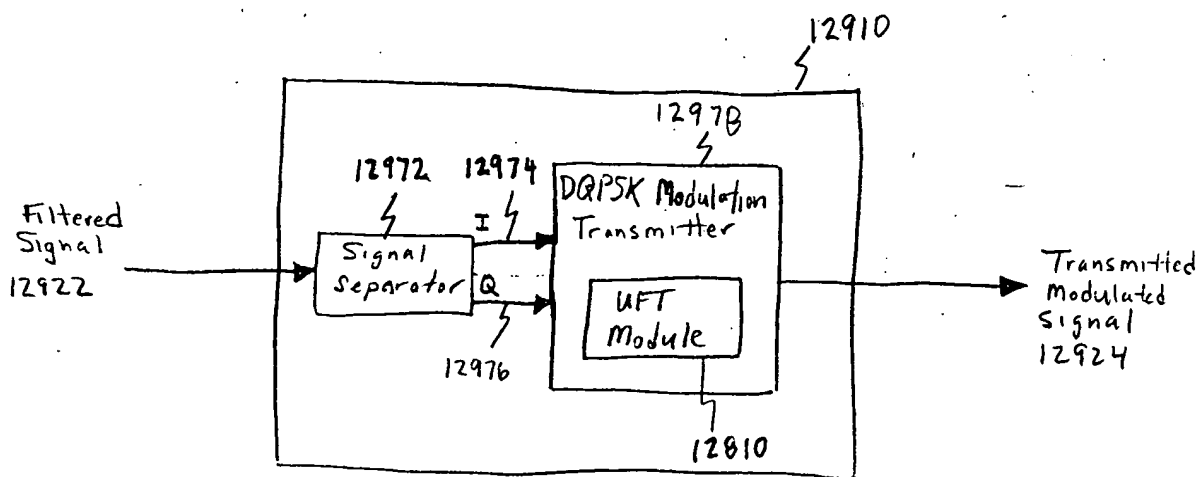


FIG. 129G

004030 25025950

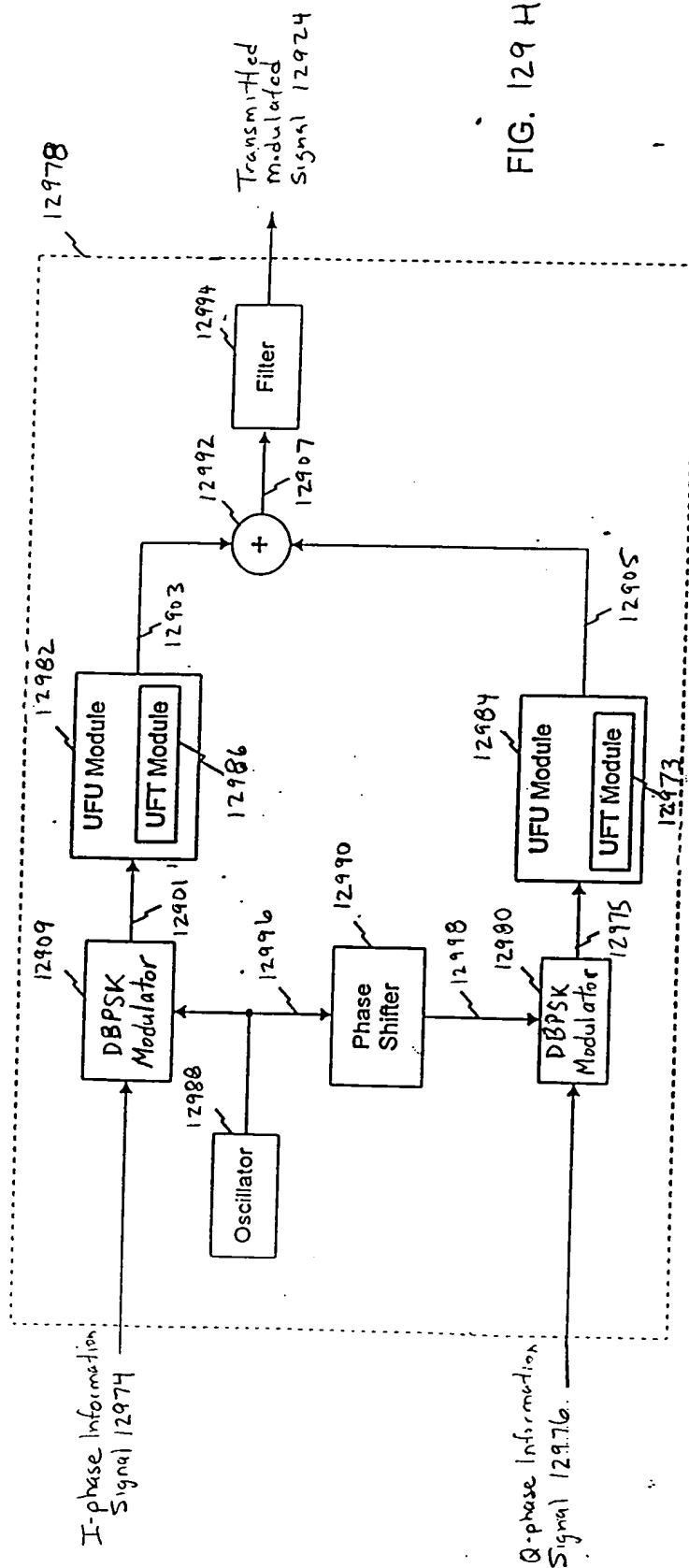
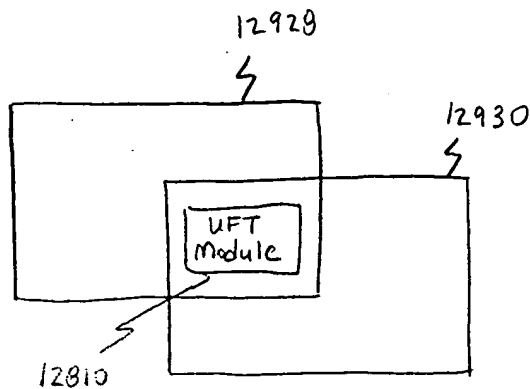
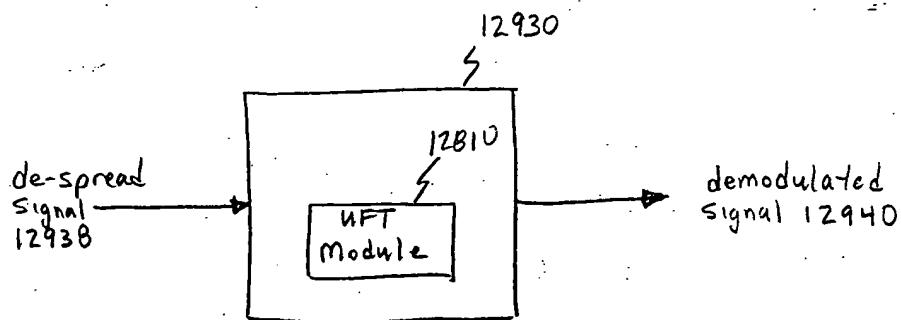
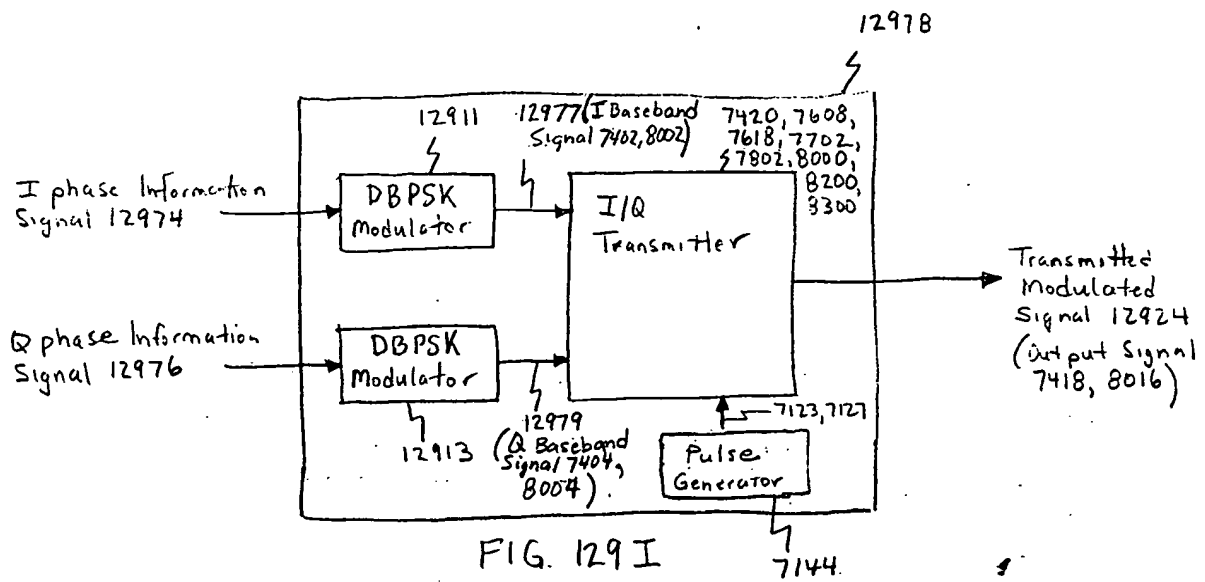


FIG. 129 H



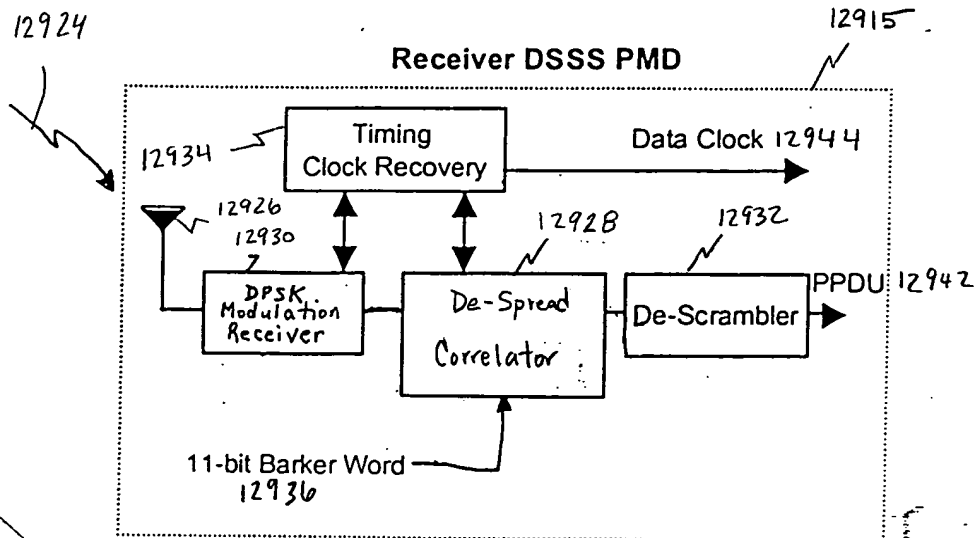


FIG. 129 L

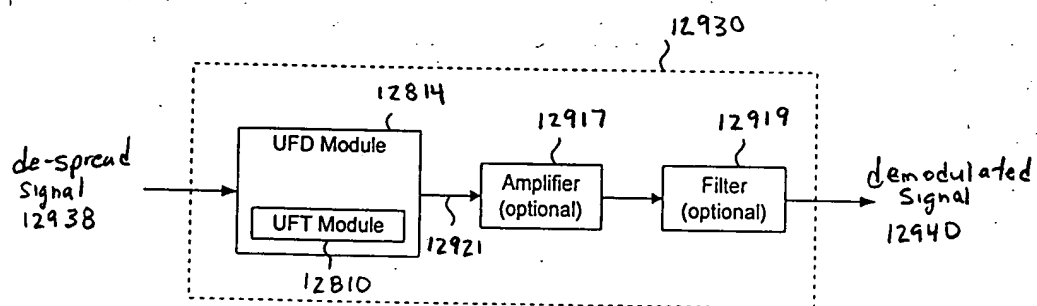


FIG. 129 M

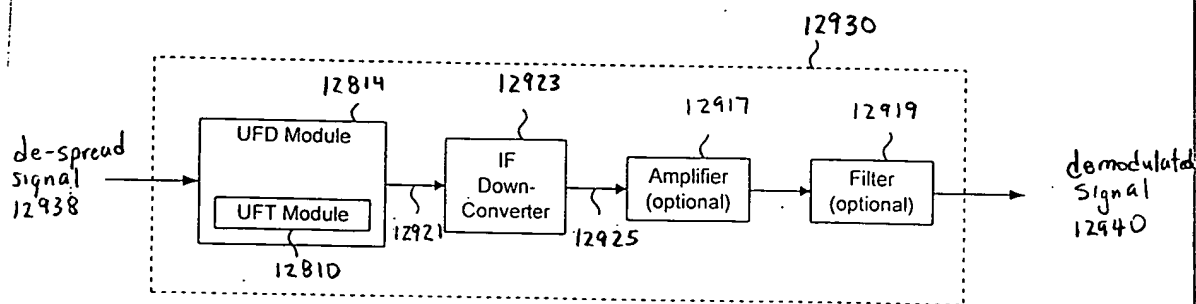


FIG. 129 N

004090-4532960

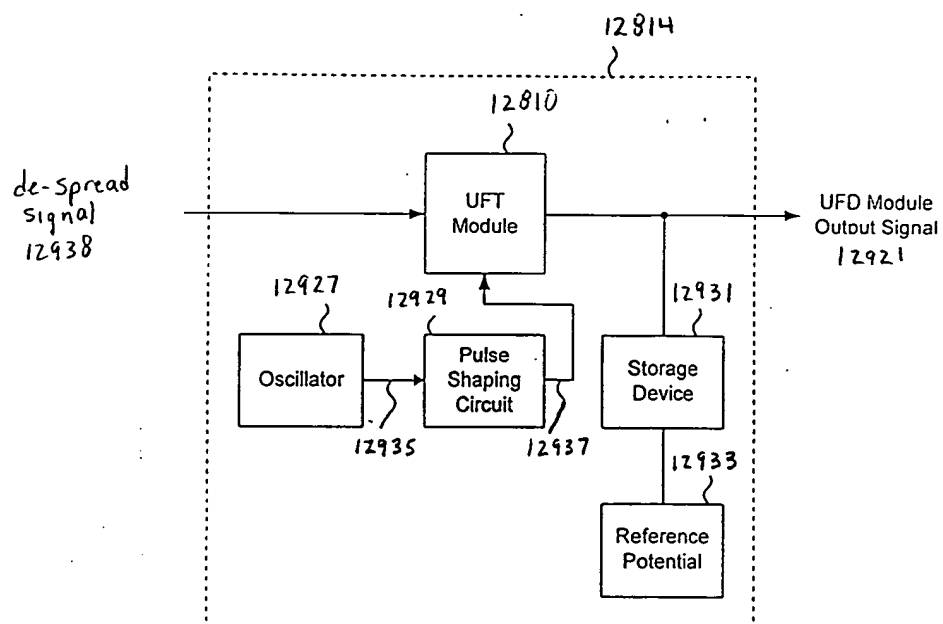


FIG. 1290

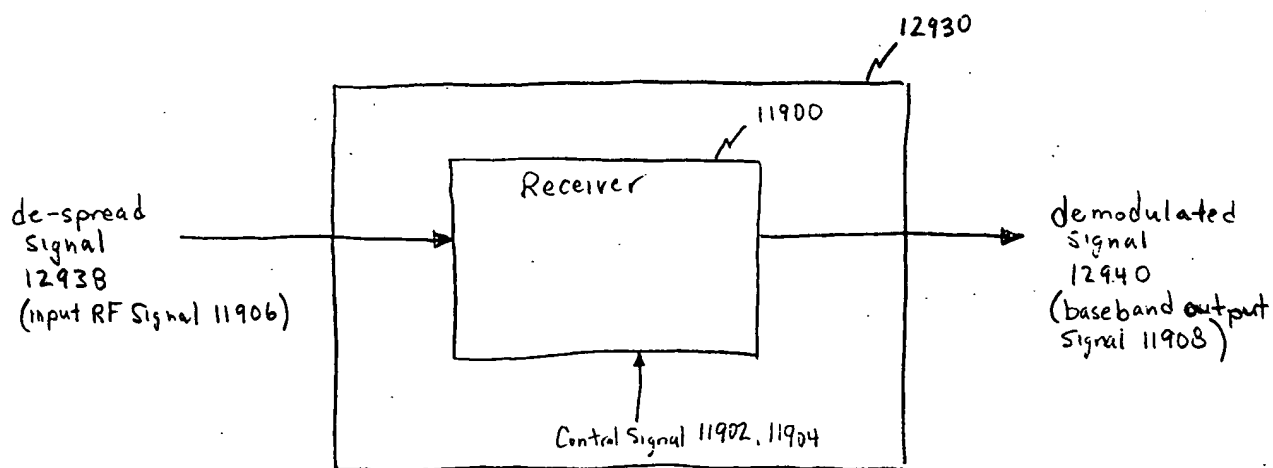


FIG. 129P

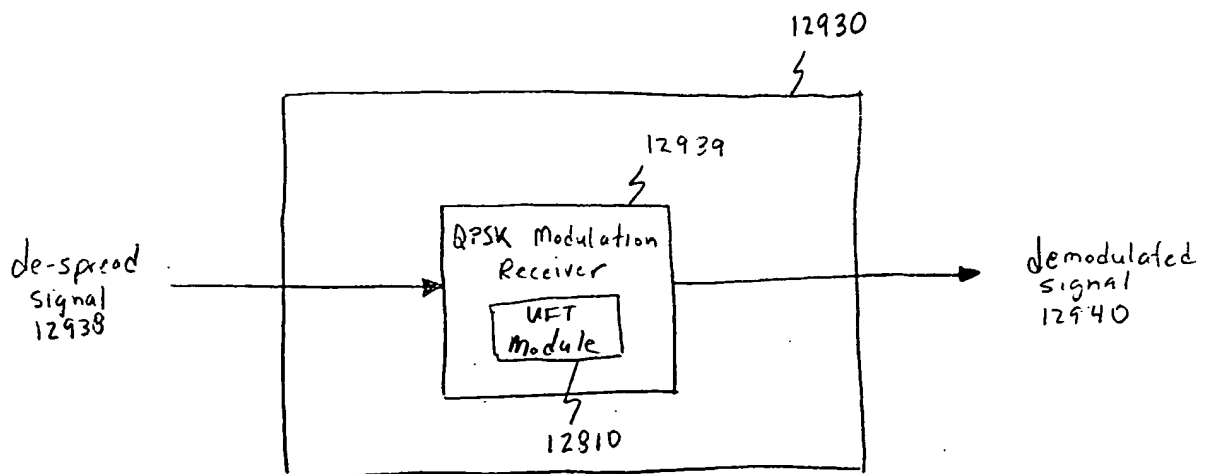


FIG. 129 Q

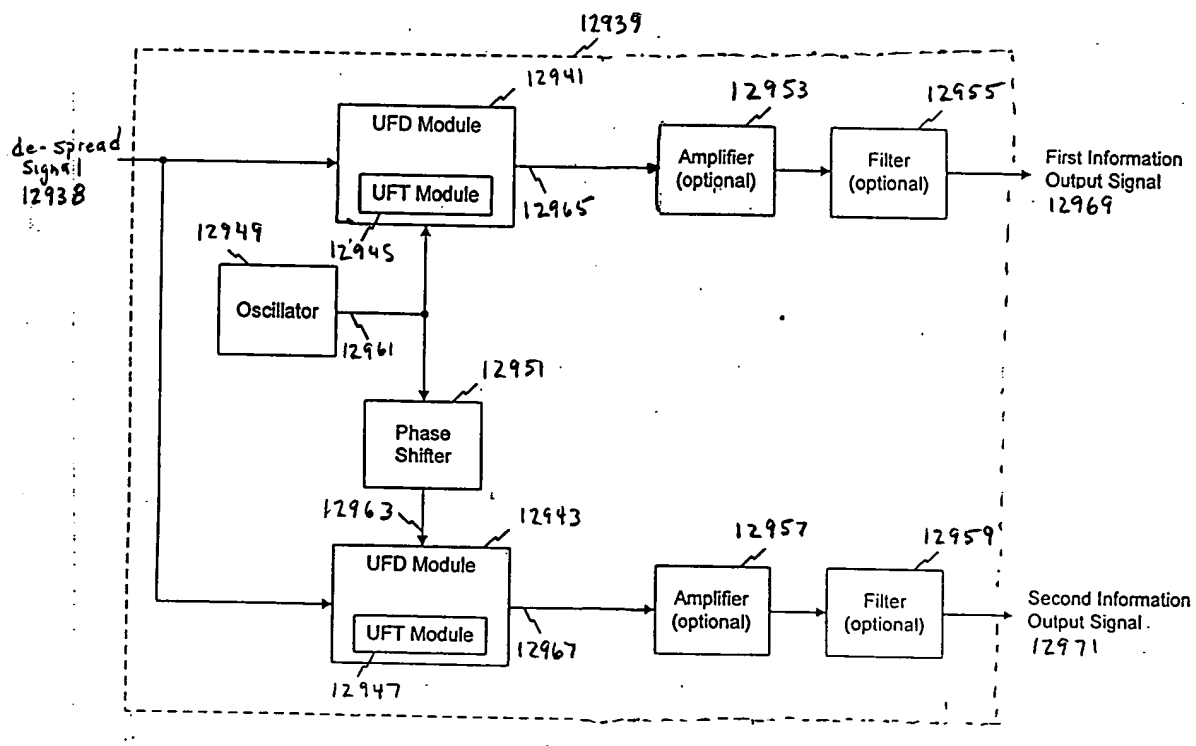


FIG. 129 R

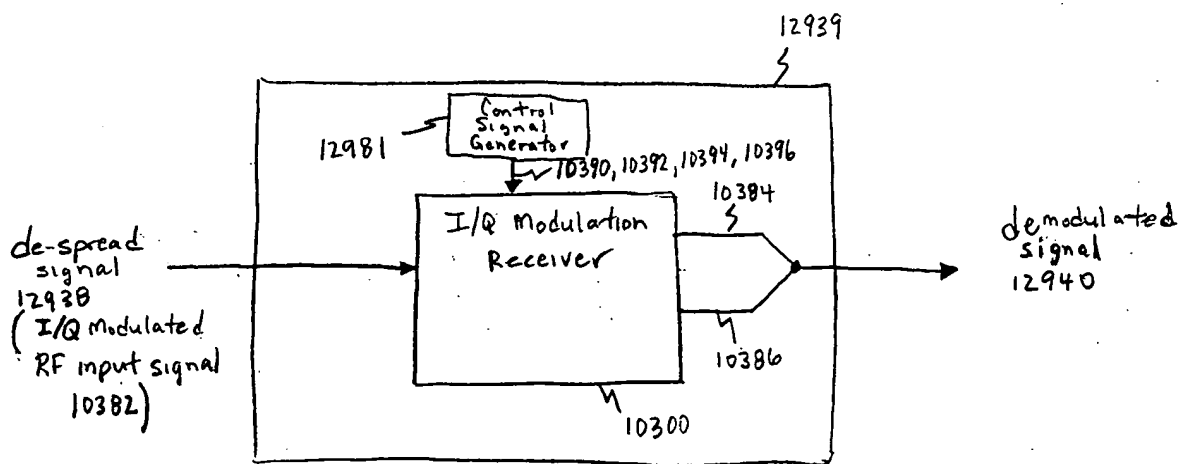


FIG. 1295

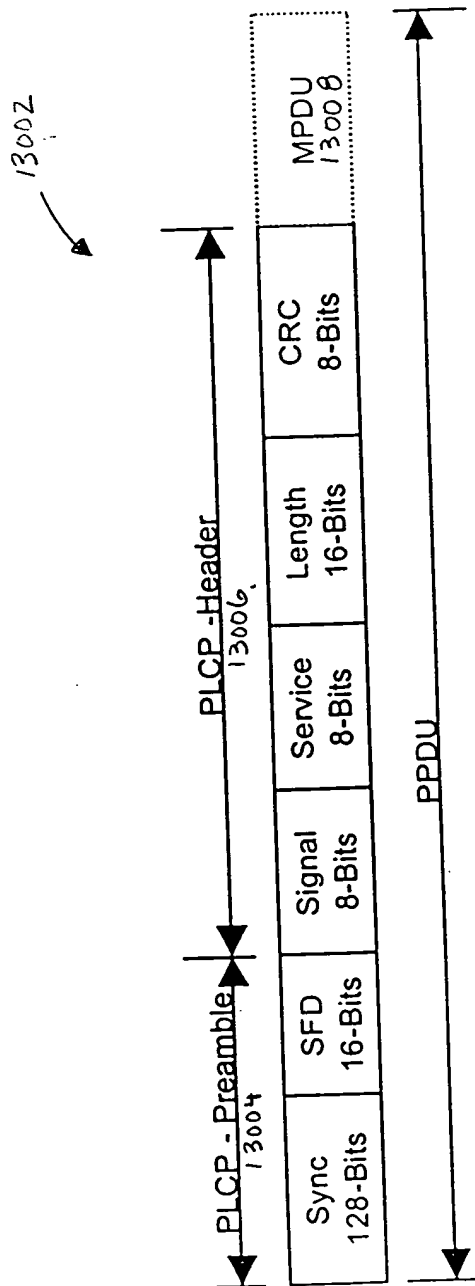


FIG. 130

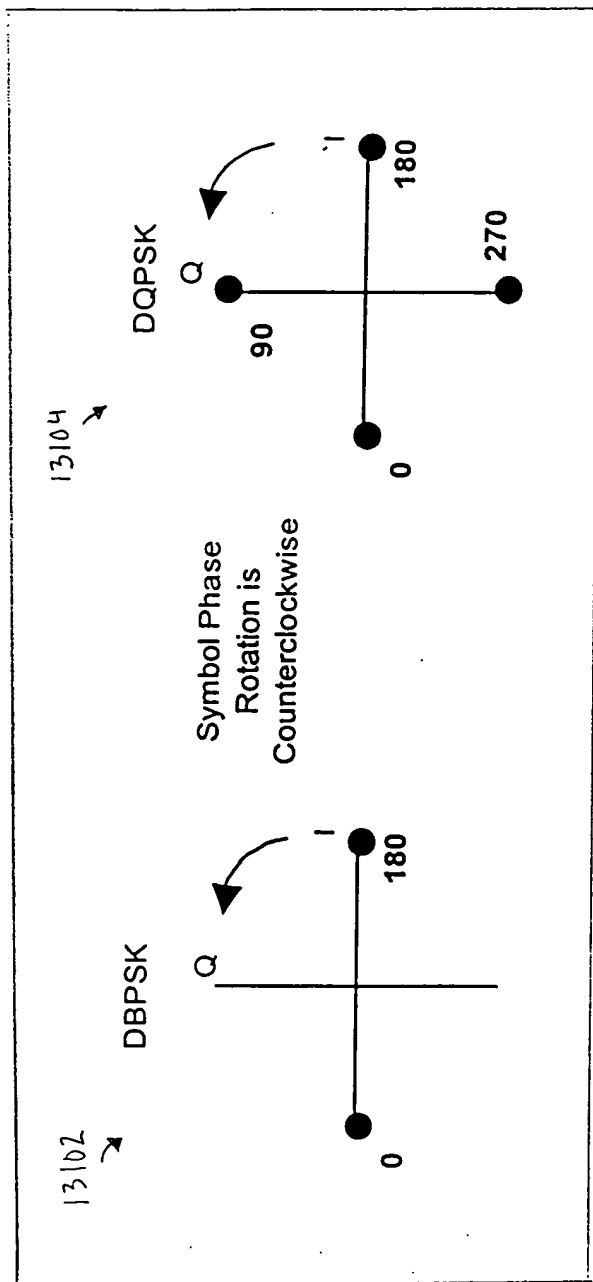


FIG. 131

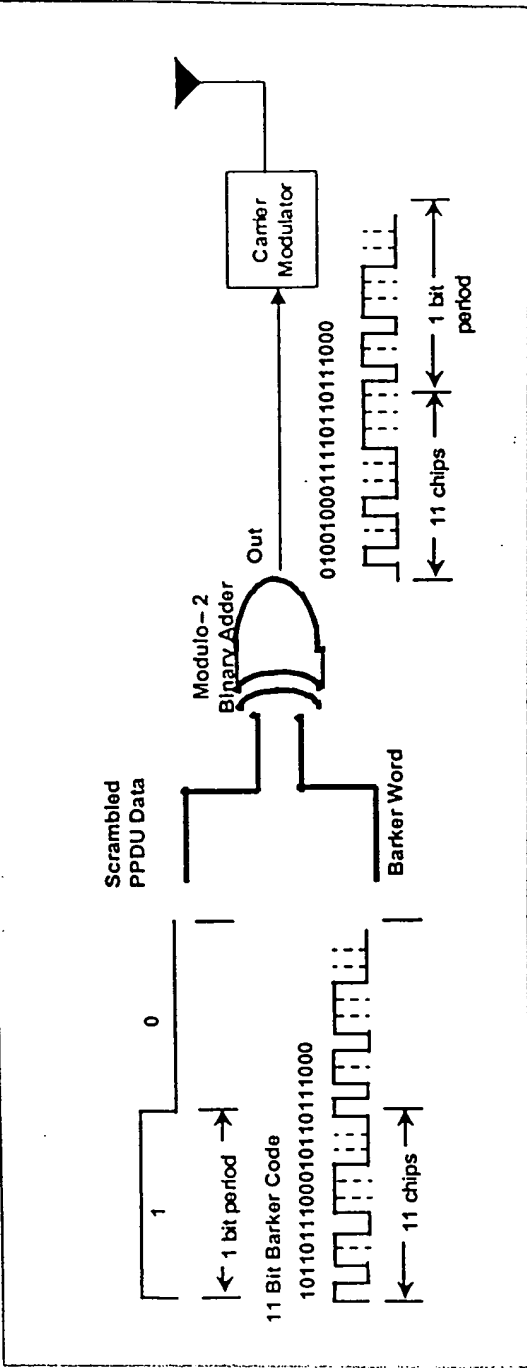


FIG. 132A

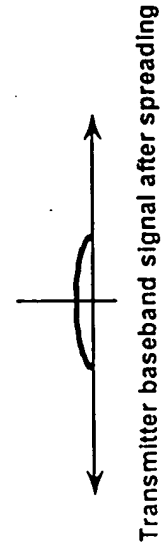
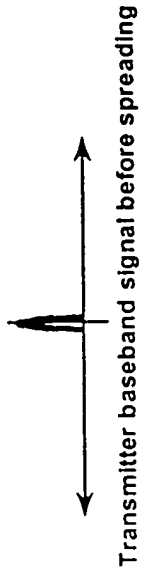
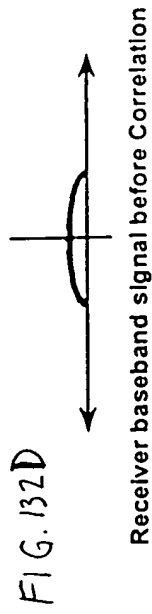


FIG. 132B

FIG. 132C

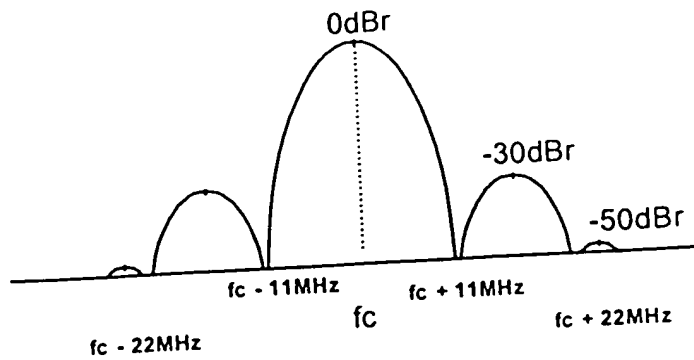


FIG. 133

Minimum
Channel spacing between
Center frequencies

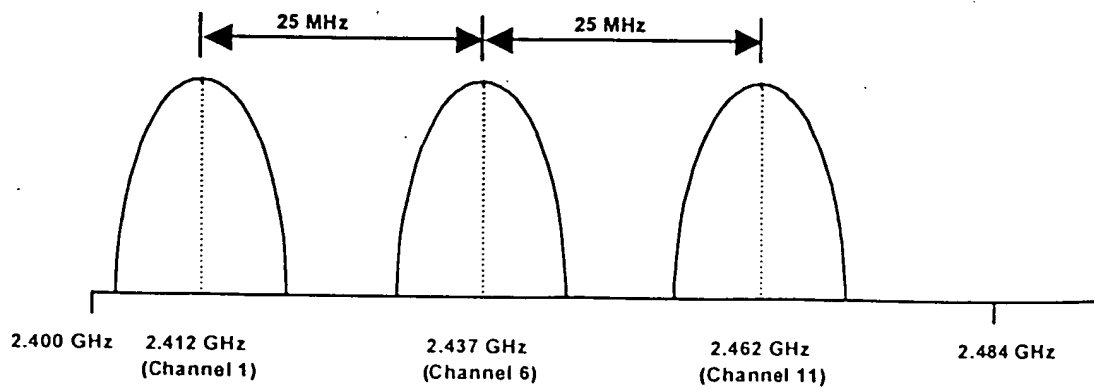


FIG. 134

004080 2592950

004030-252550

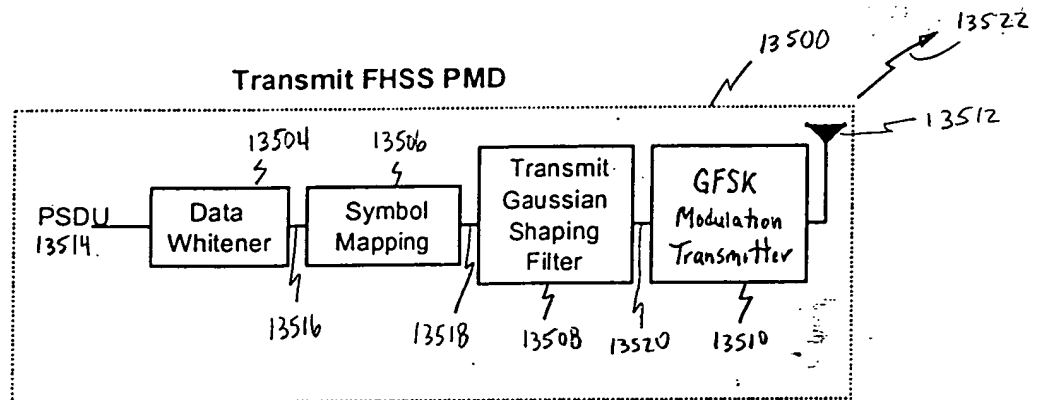


FIG. 135A

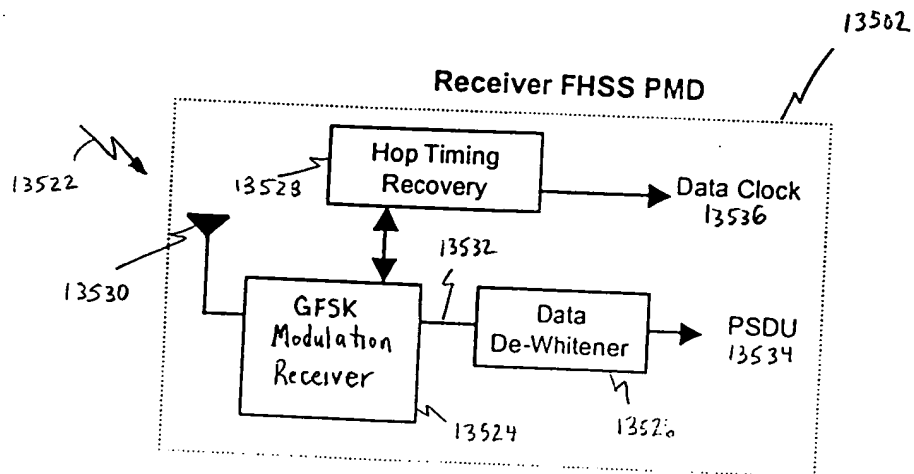


FIG. 135B

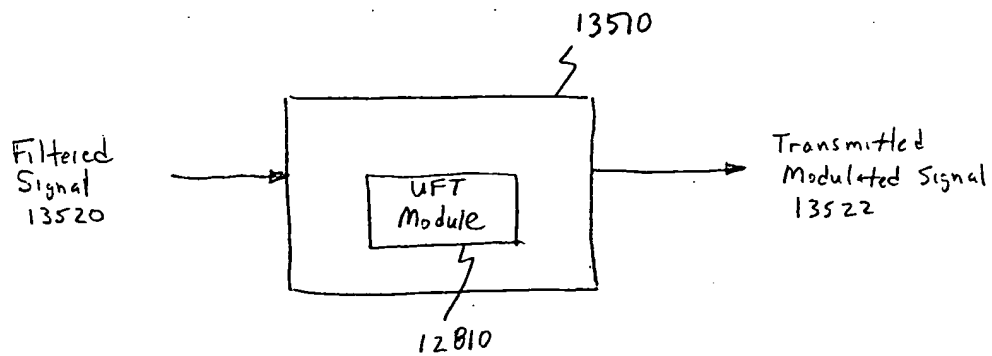


FIG. 135C

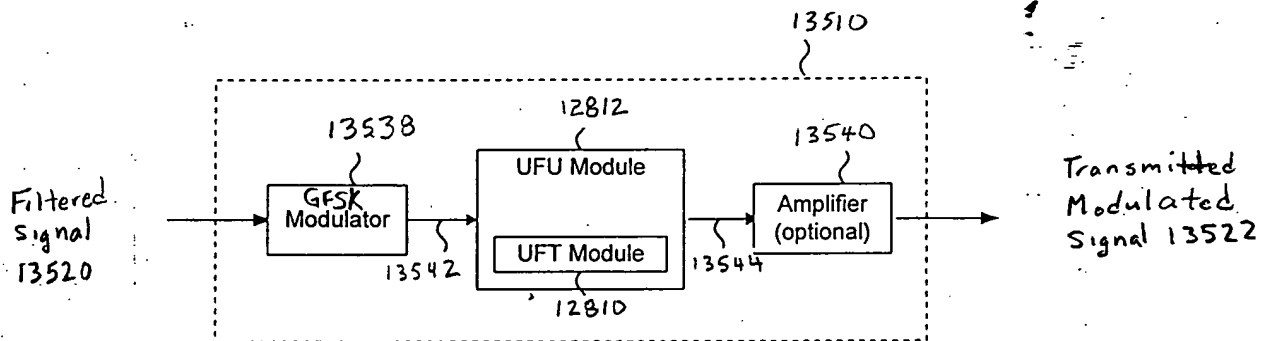


FIG. 135D

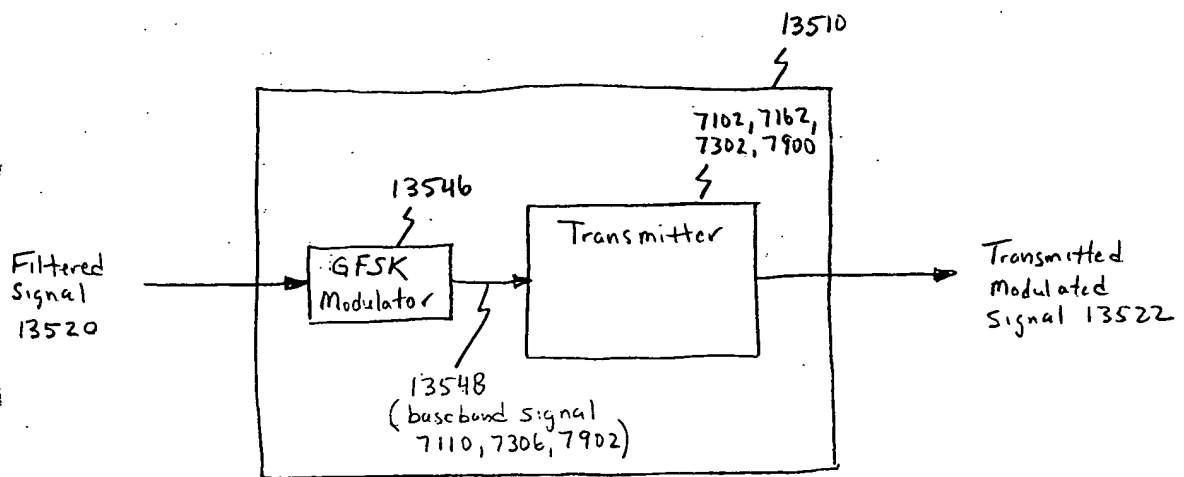


FIG. 135E

004080-2502050

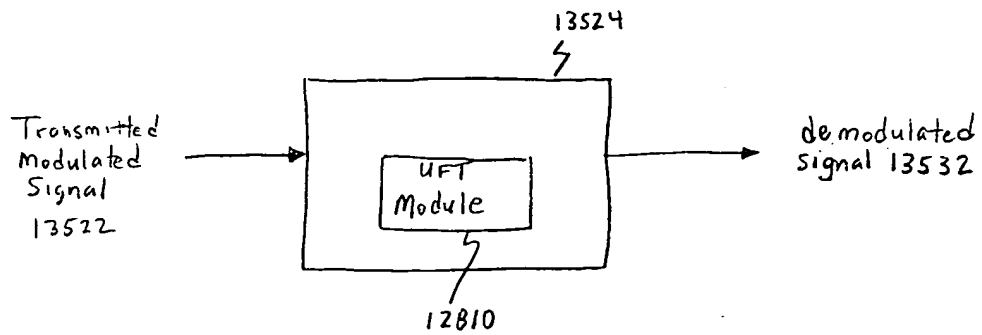


FIG. 135F

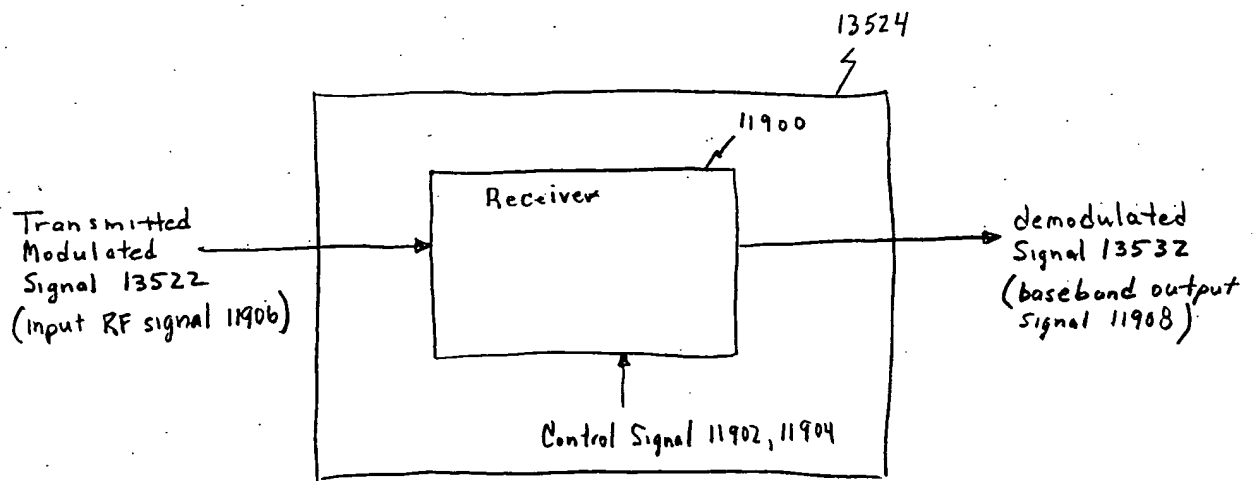


FIG. 135G

004030 2626950

13600

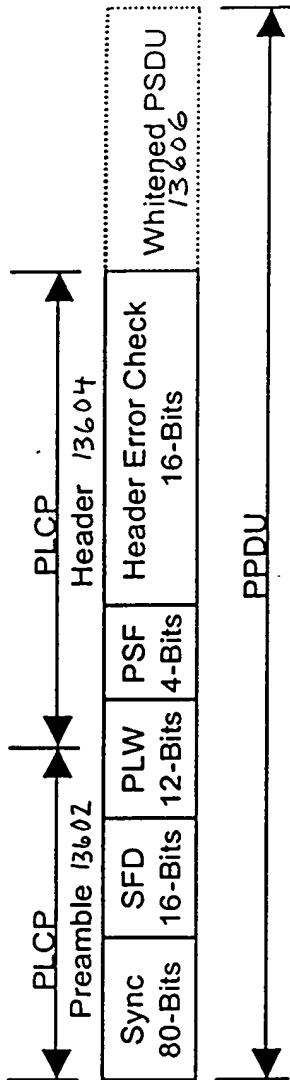


FIG. 136

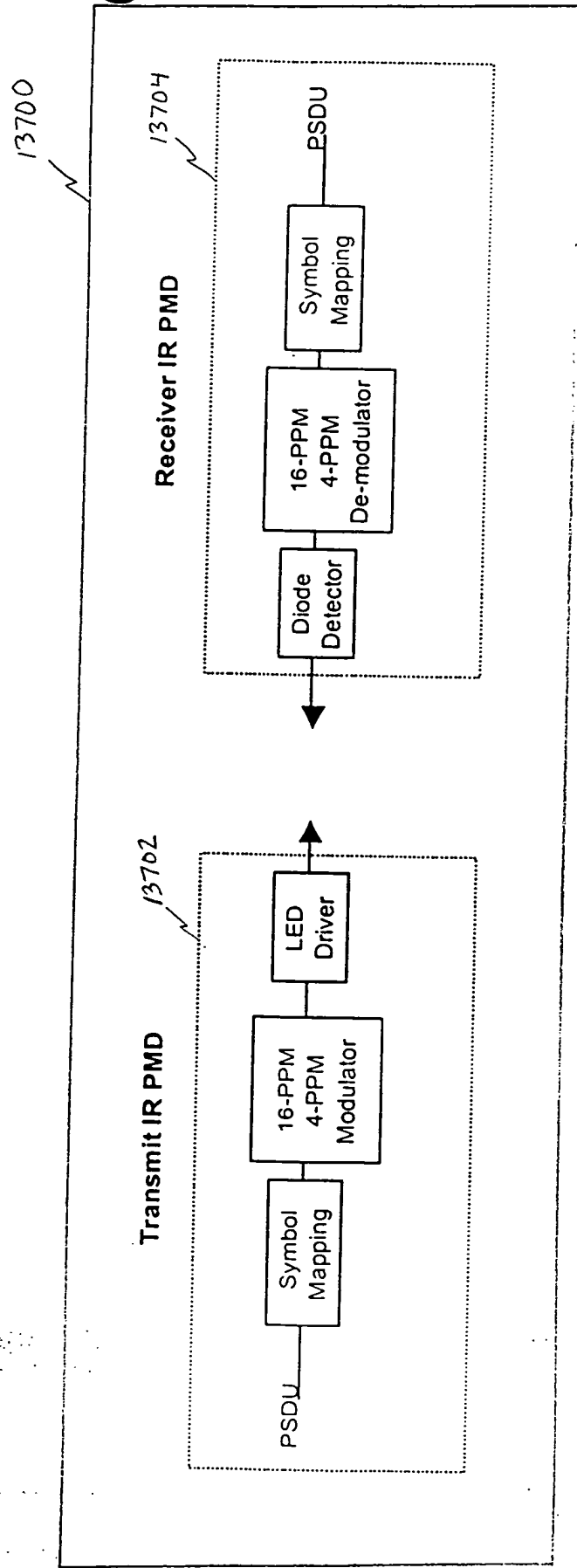


FIG. 137

13800

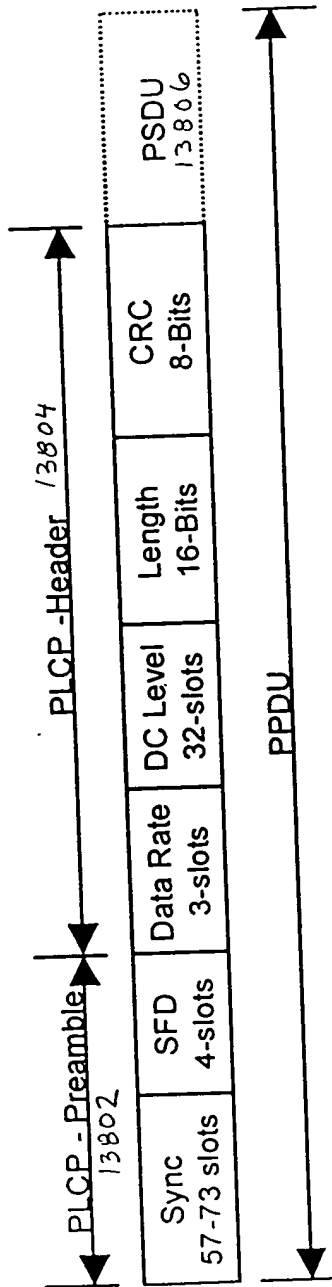


FIG. 138

13900

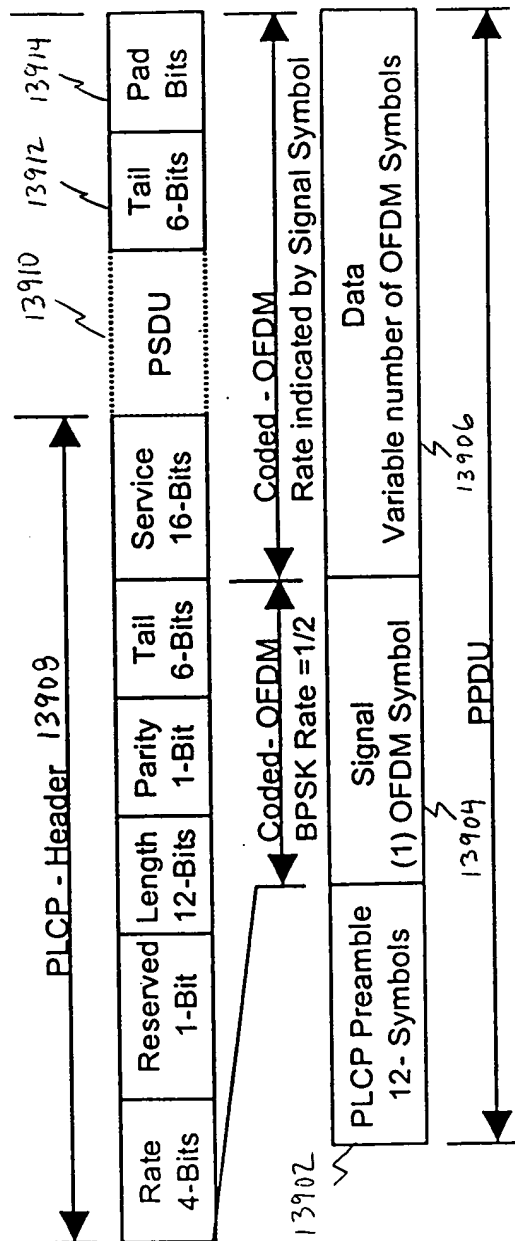


FIG. 139

the fact that the \mathcal{H}^1 -norm of the function $\mathcal{H}^1(\mathbb{R}^d)$ is not a norm on $\mathcal{H}^1(\mathbb{R}^d)$ (see [1, 2]).

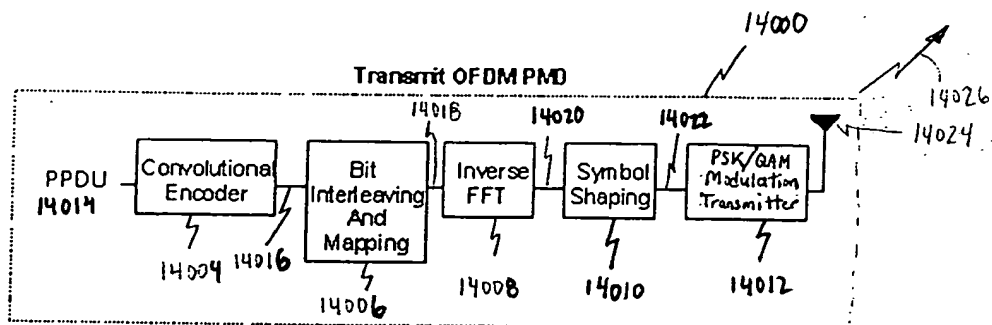


FIG. 140A

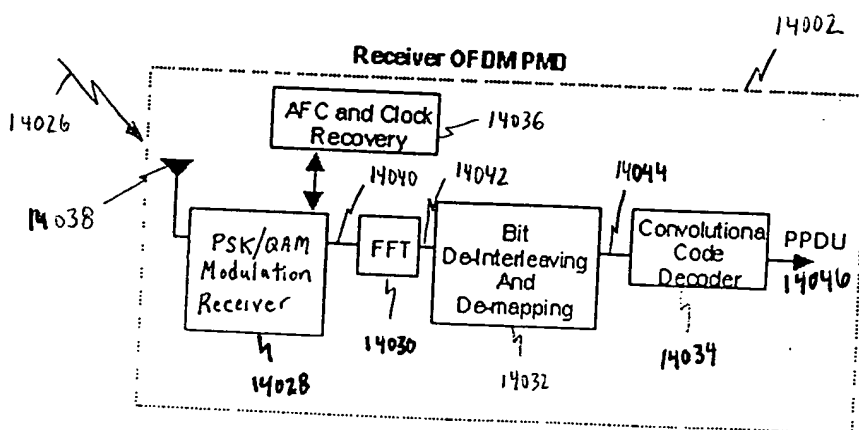


FIG. 140B

Questions and answers on the new **Q**uestions and answers on the new

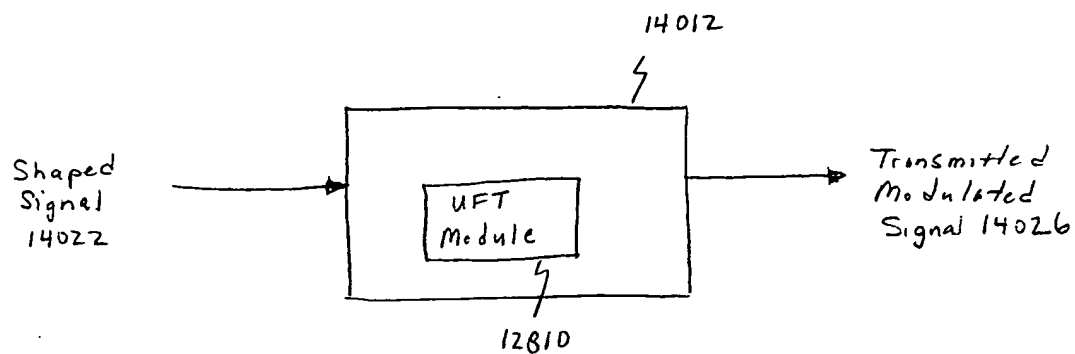


FIG. 140 C

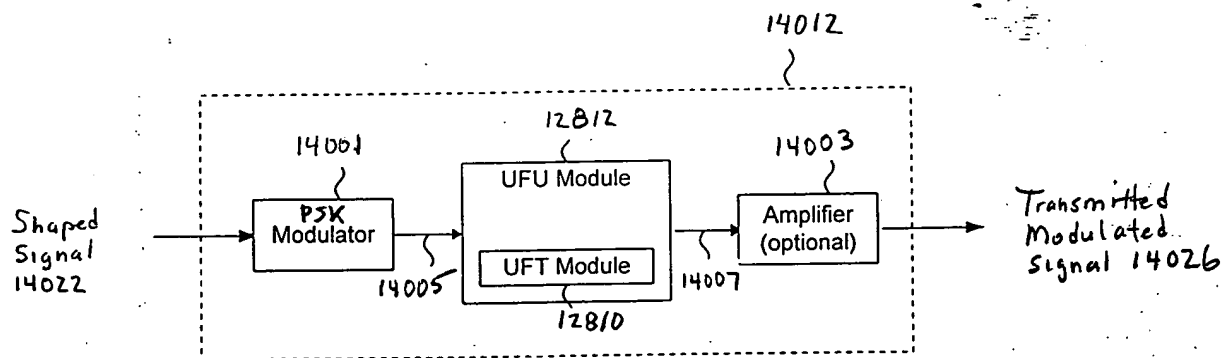


FIG. 140D

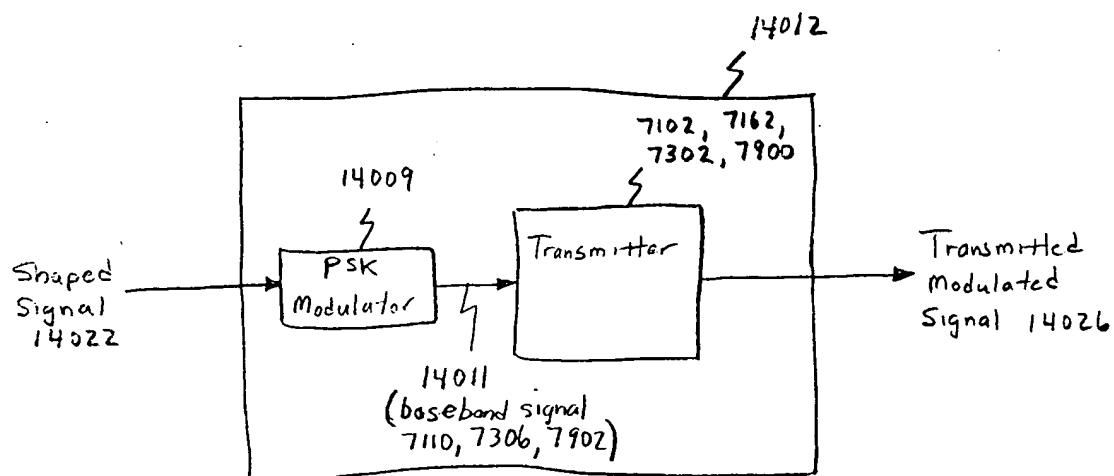


FIG. 140E

004030 2522660

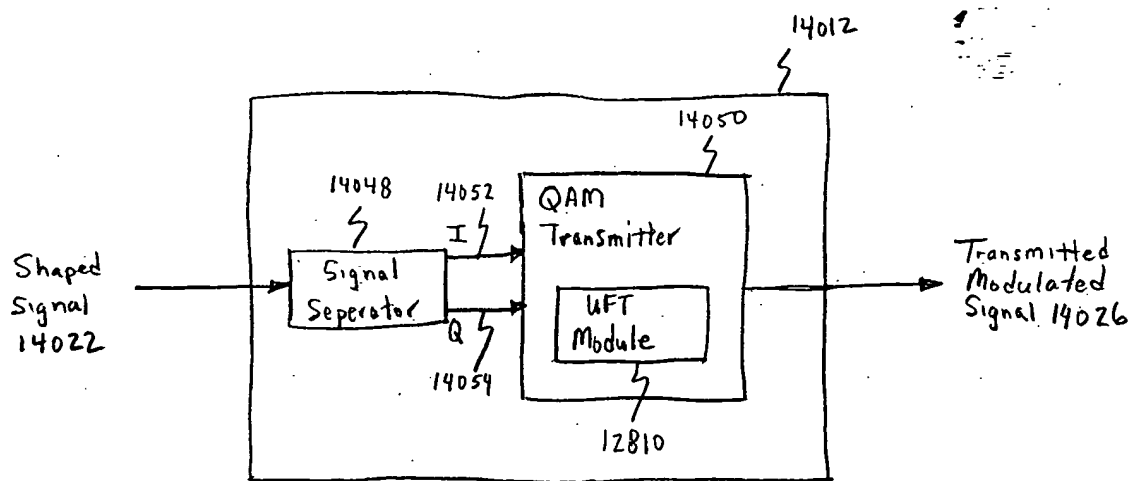


FIG. 140F

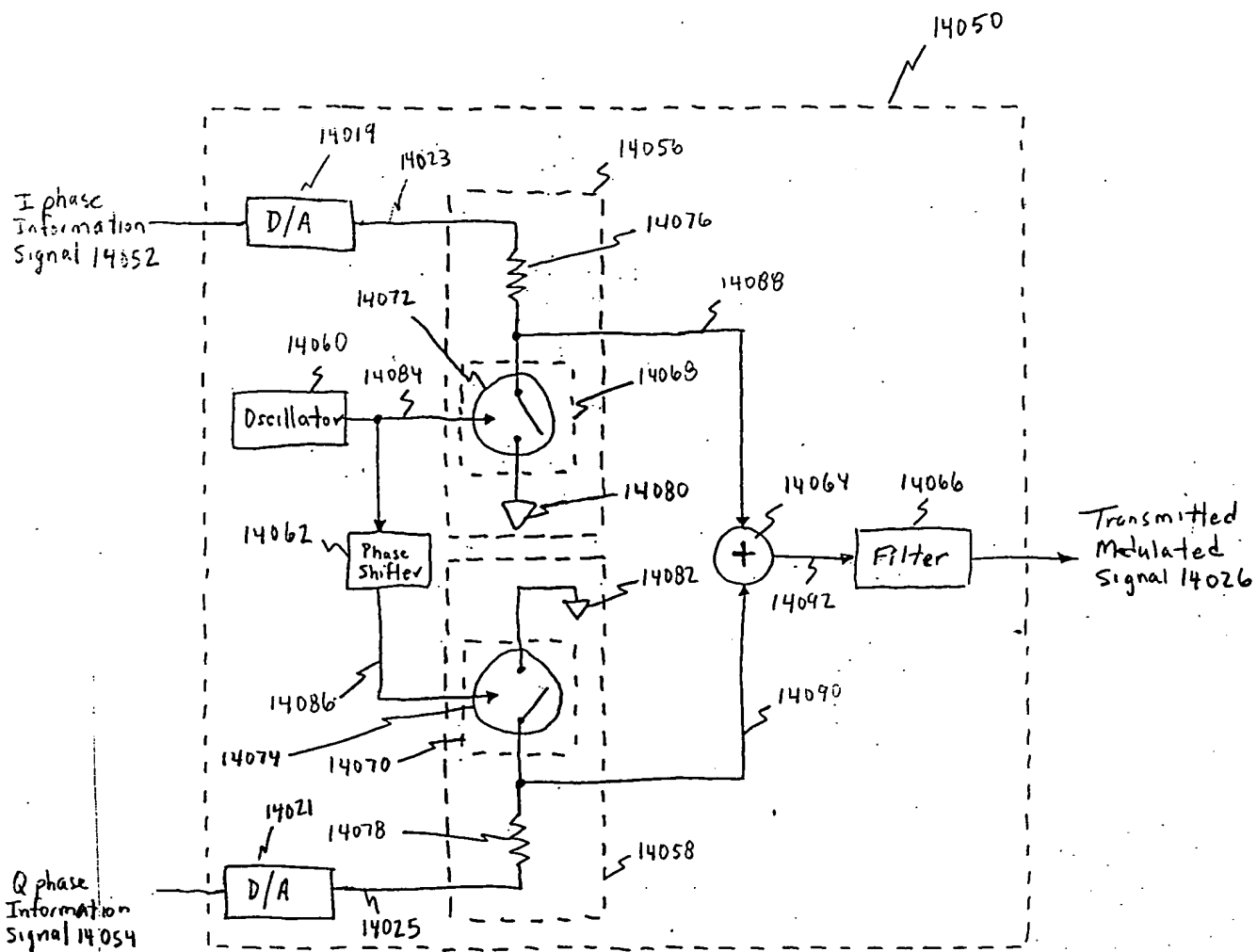


FIG. 140 G

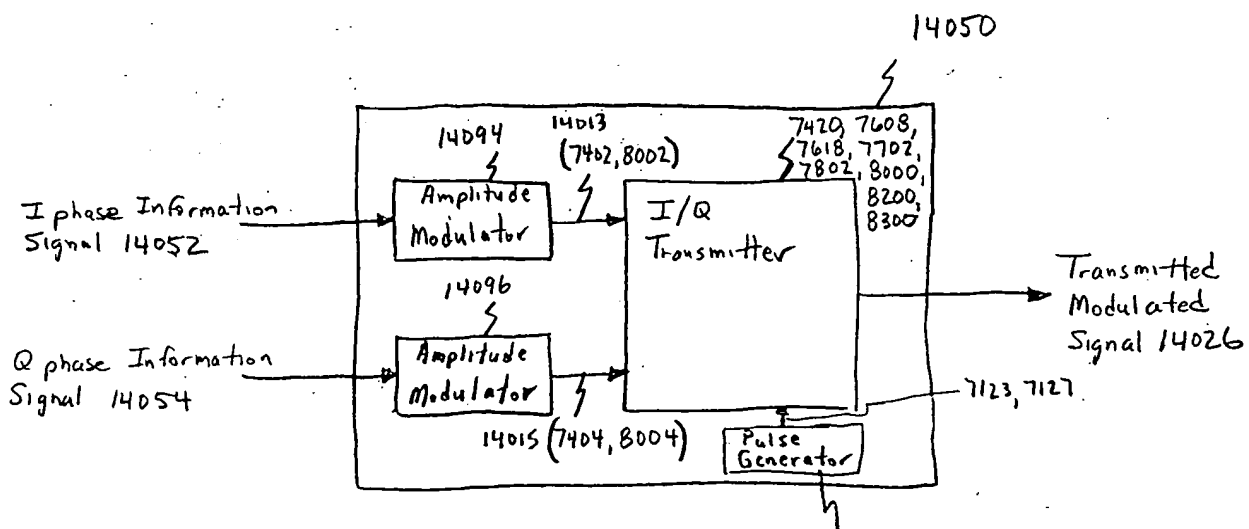


FIG. 140 H

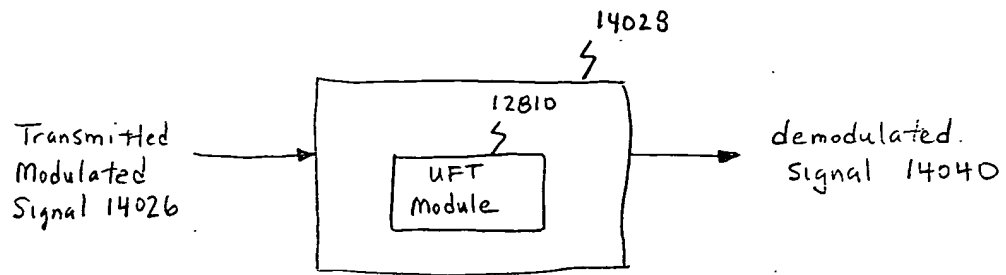


FIG. 140 I

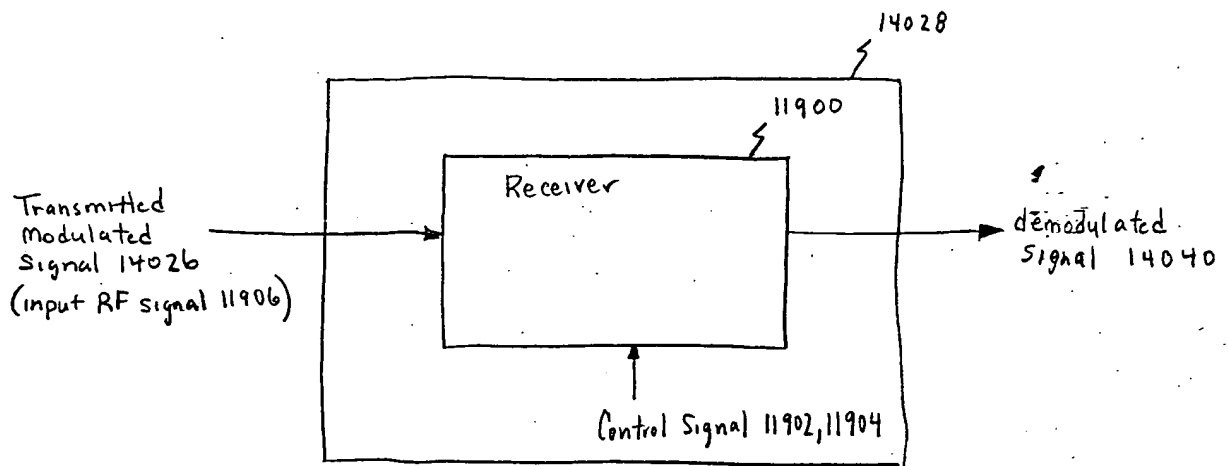


FIG. 140 J

004039 2625950

004030 2523555

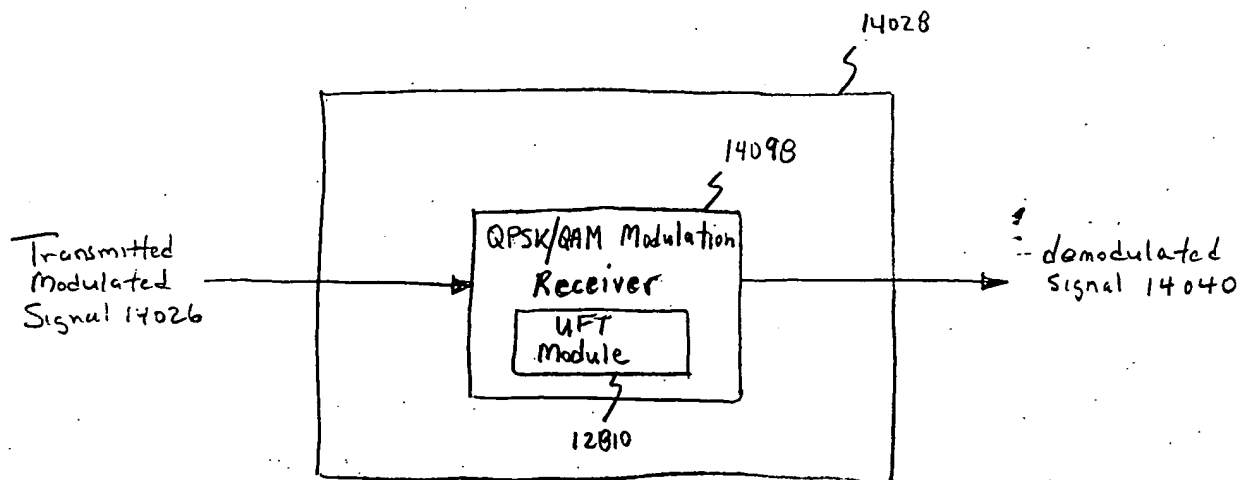


FIG. 140 K

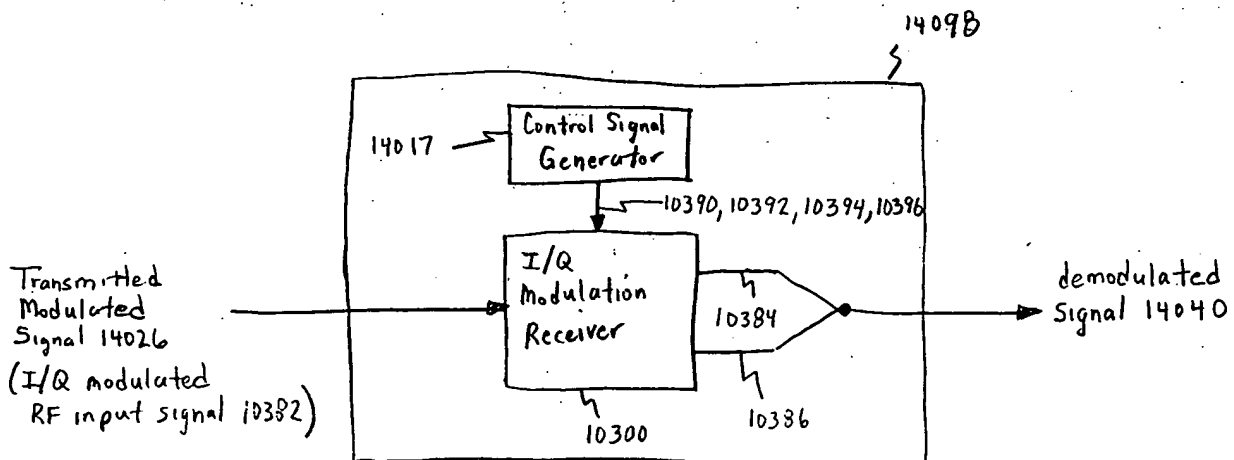


FIG. 140 L

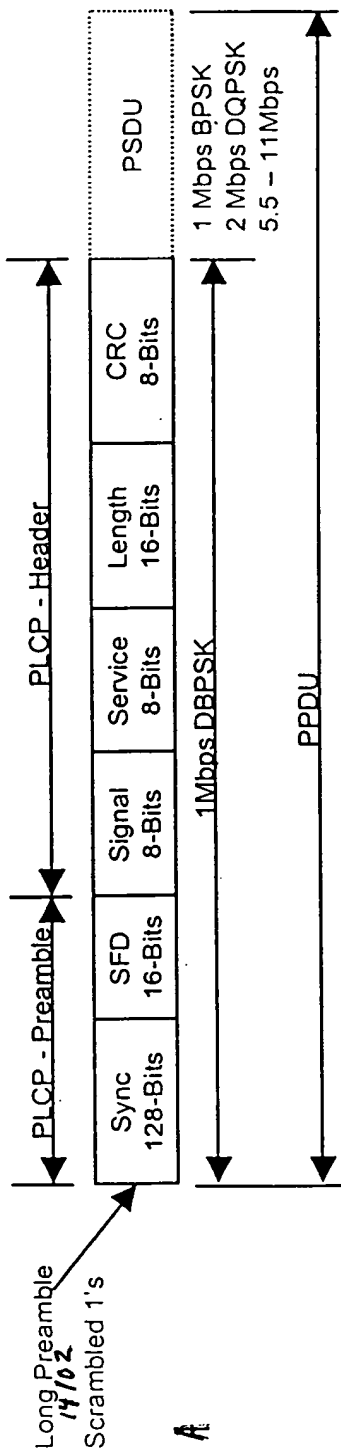


FIG. 141A

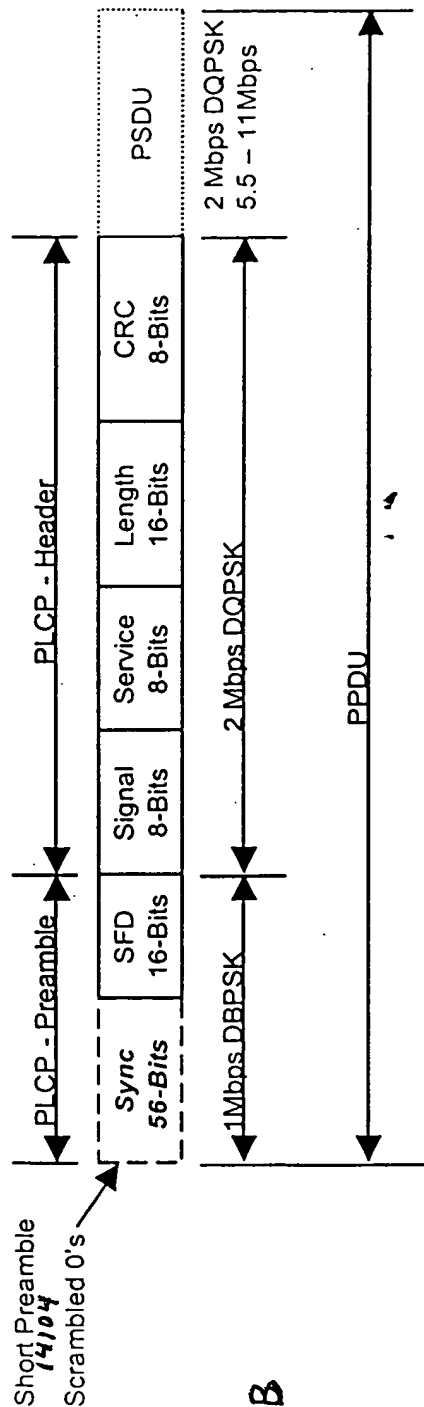


FIG. 141B

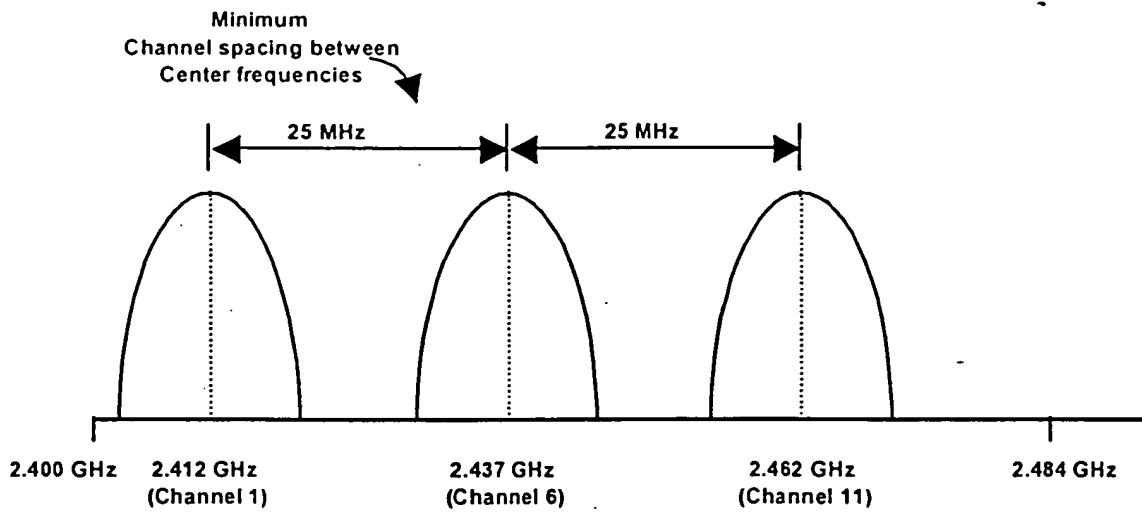


FIG. 142

004000 000000

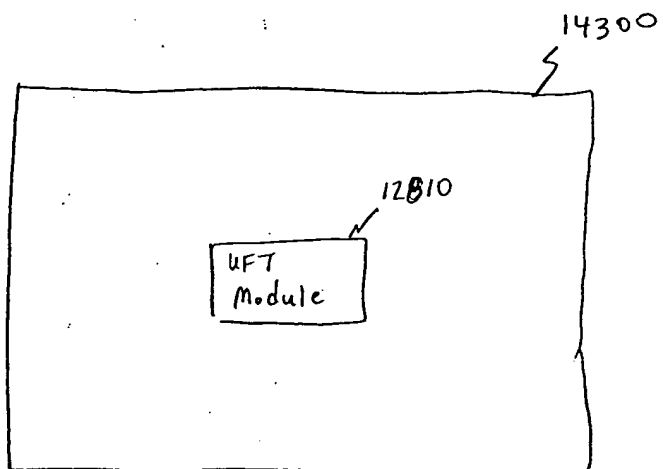
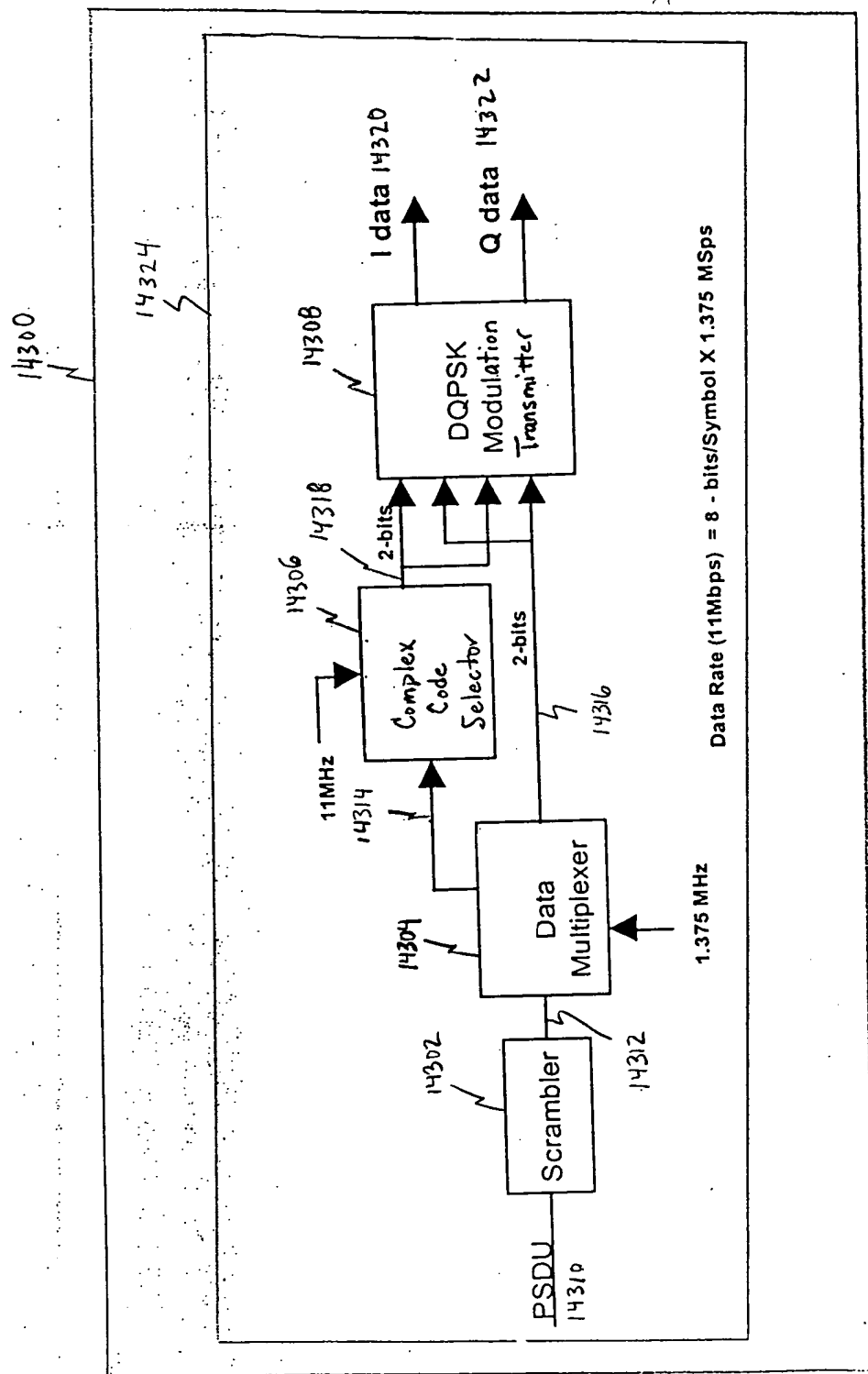


FIG. 143 A



Data Rate (1Mbps) = 8 - bits/Symbol X 1.375 MSps

FIG. 143B

004030 453350

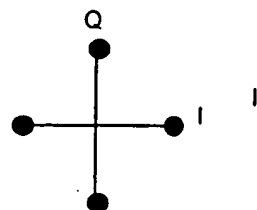
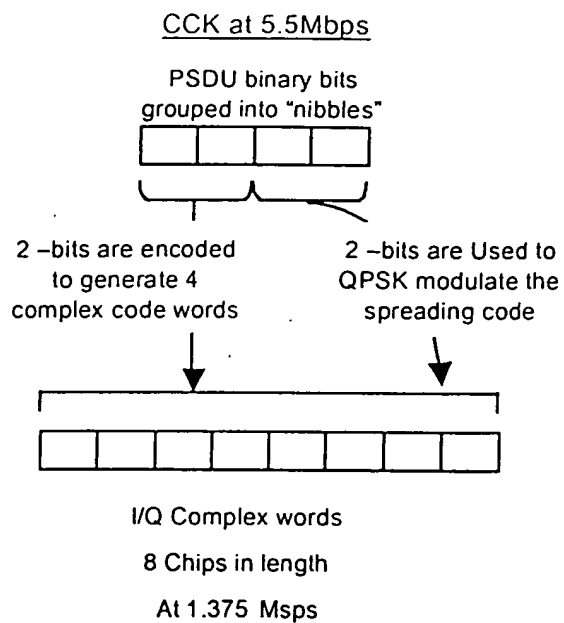


FIG. 144A

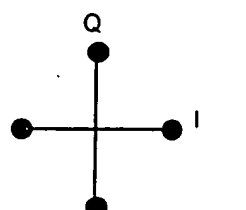
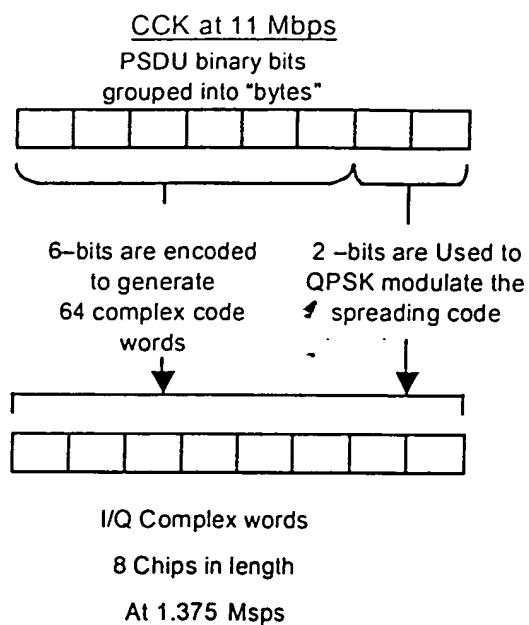


FIG. 144B

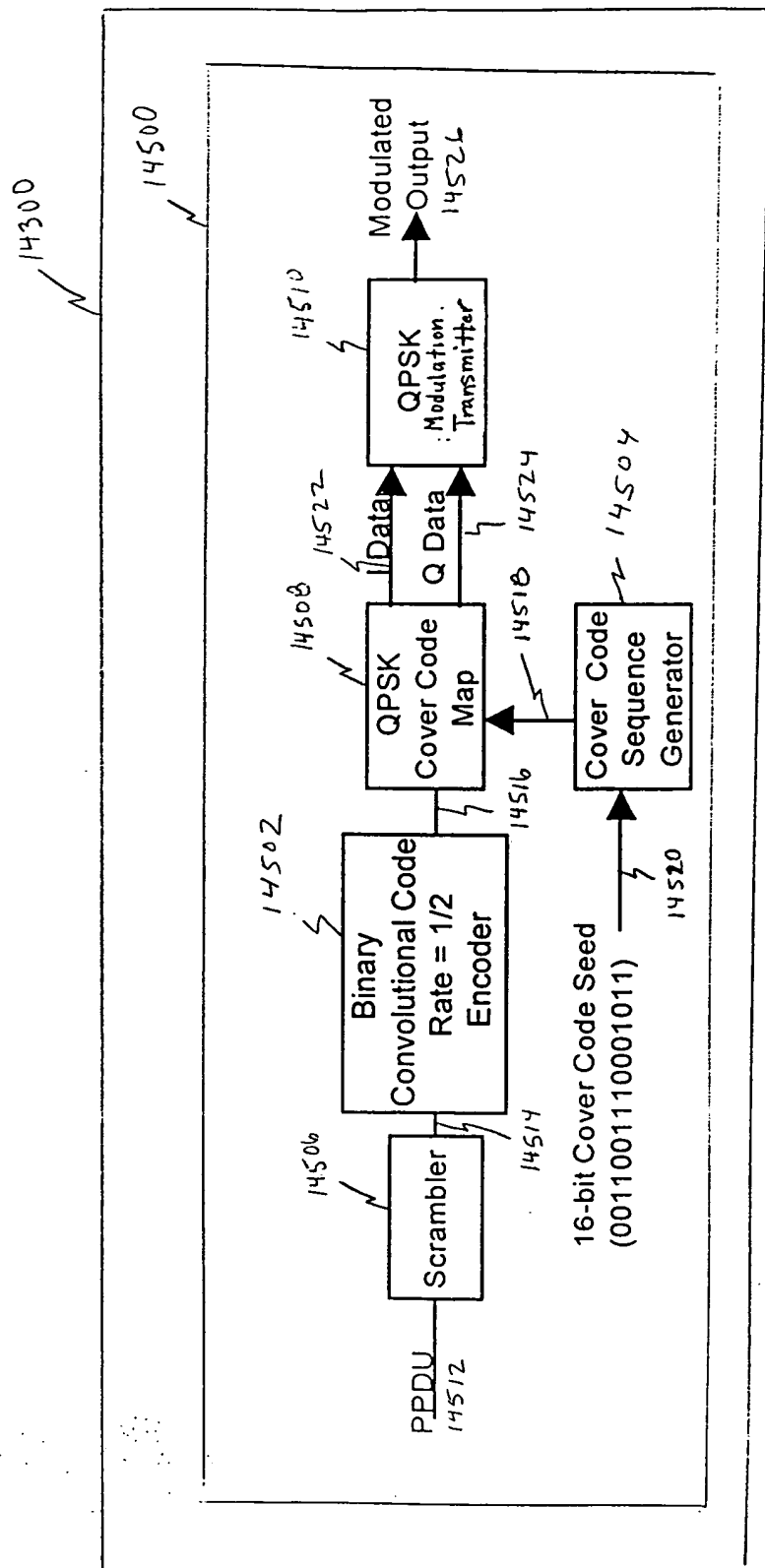


FIG. 145A

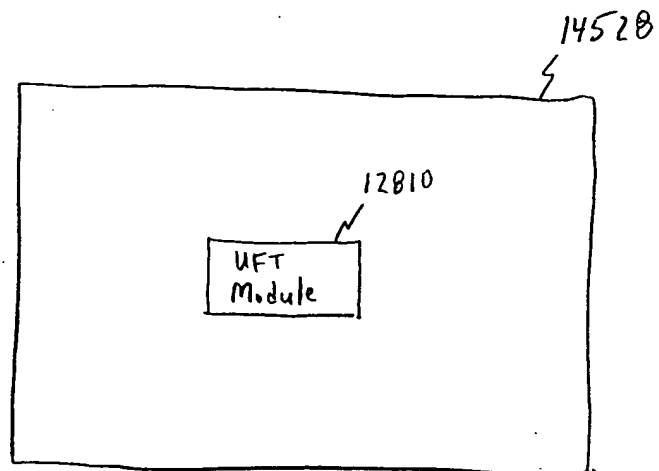


FIG. 145B

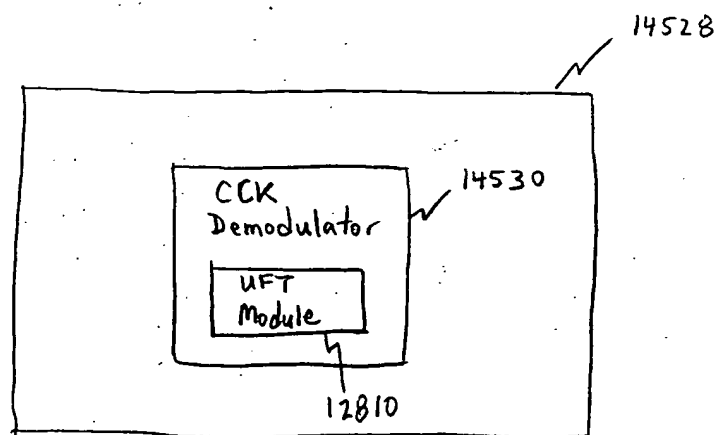


FIG. 145C

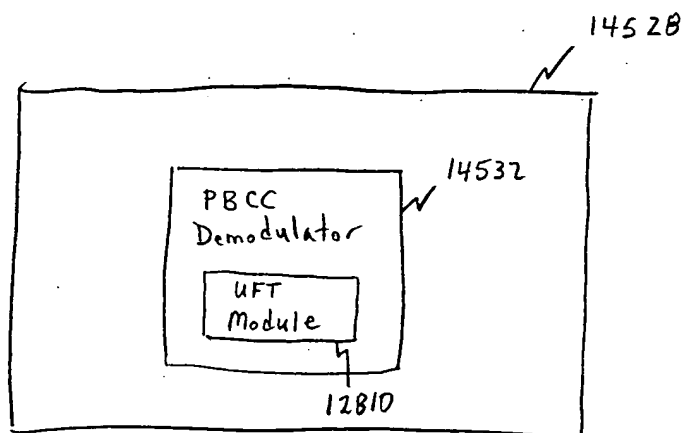


FIG. 145D

004030 2532E360

FIG. 146

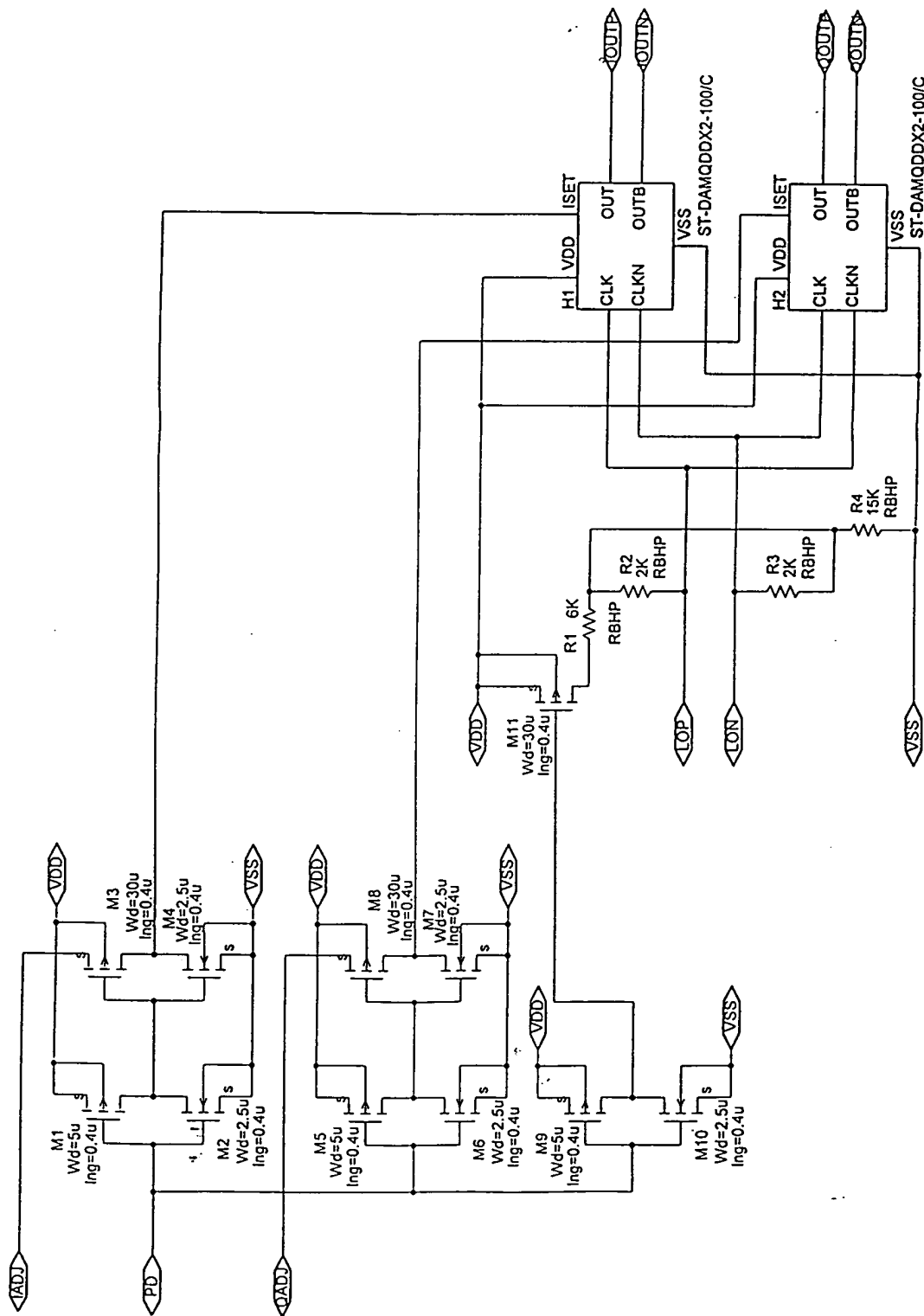


FIG. 147

FIG. 148

FIG. 149

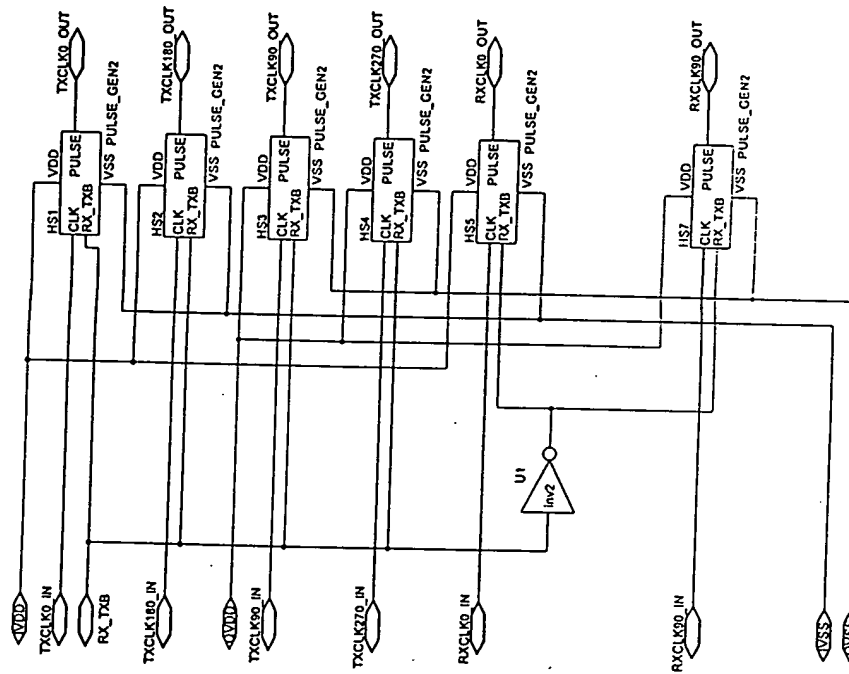
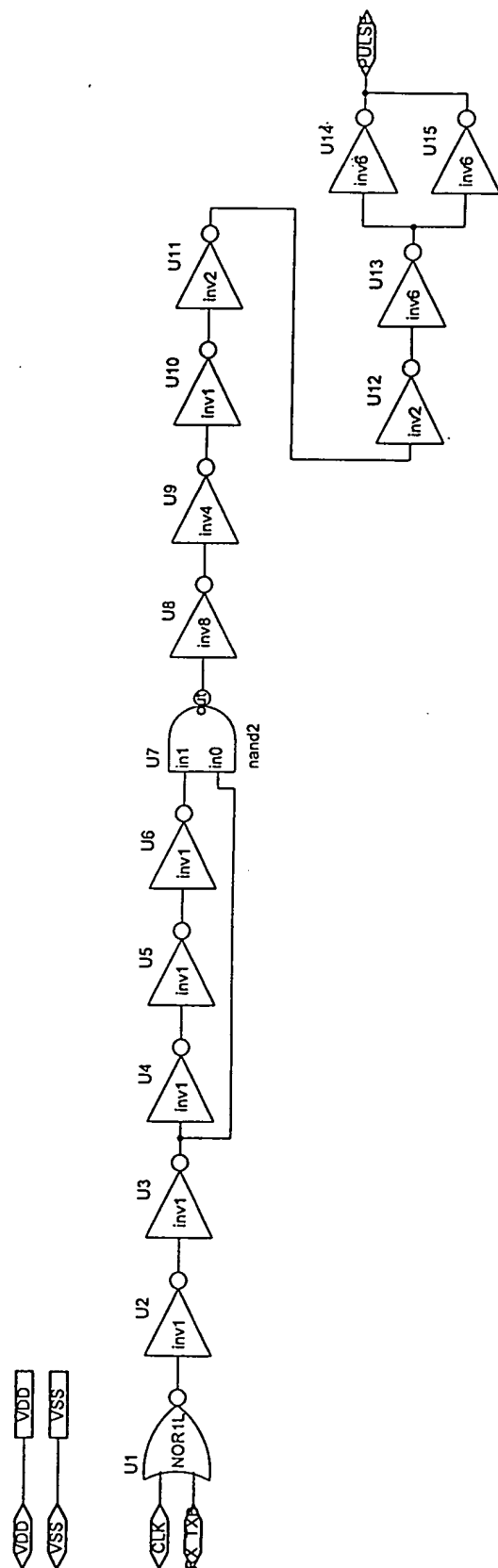


FIG. 149

1. The first group of people who are interested in the study of the history of the world are the historians. They are the people who study the past and write about it. They are the people who tell us what happened in the past and why it happened. They are the people who help us to understand the world we live in today.



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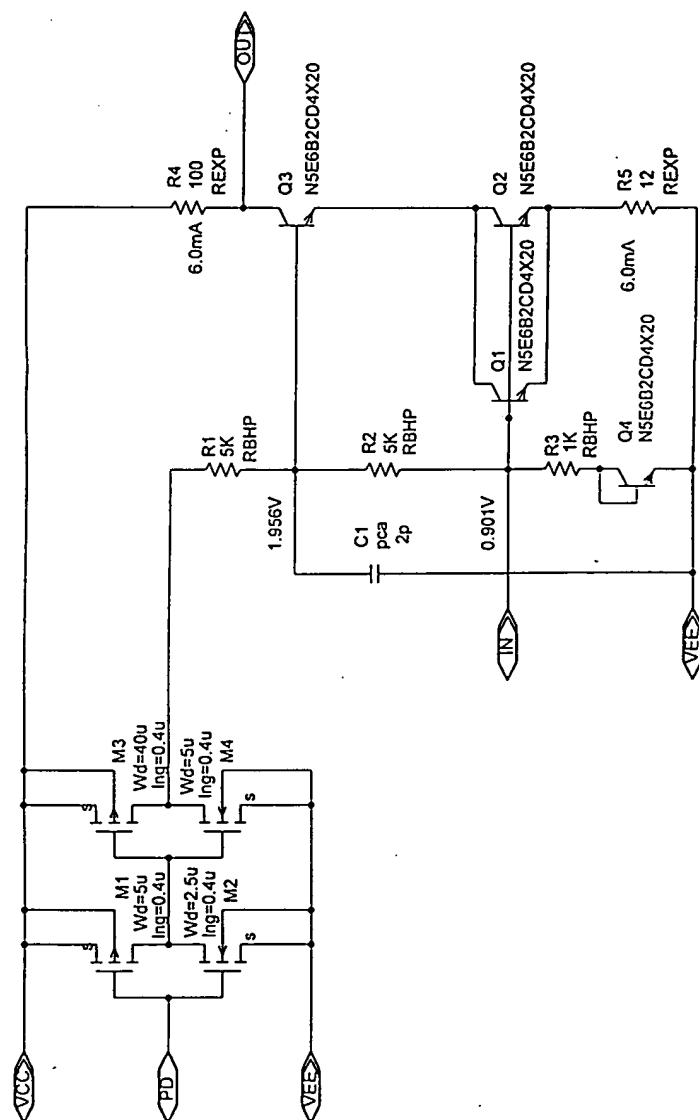


Fig. 151

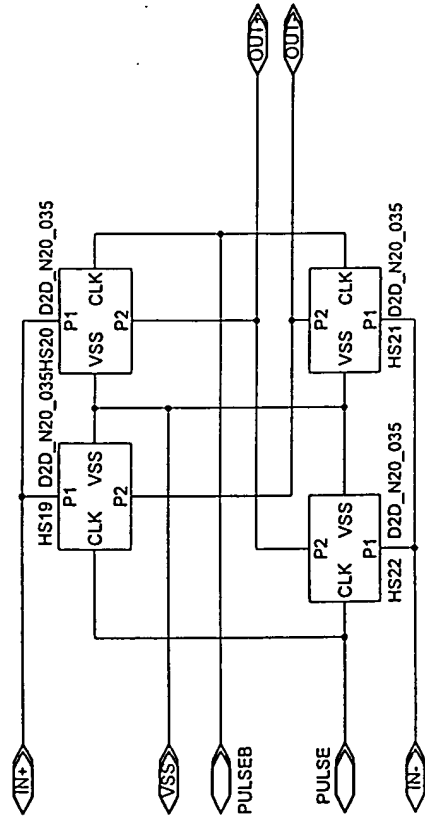


FIG. 152

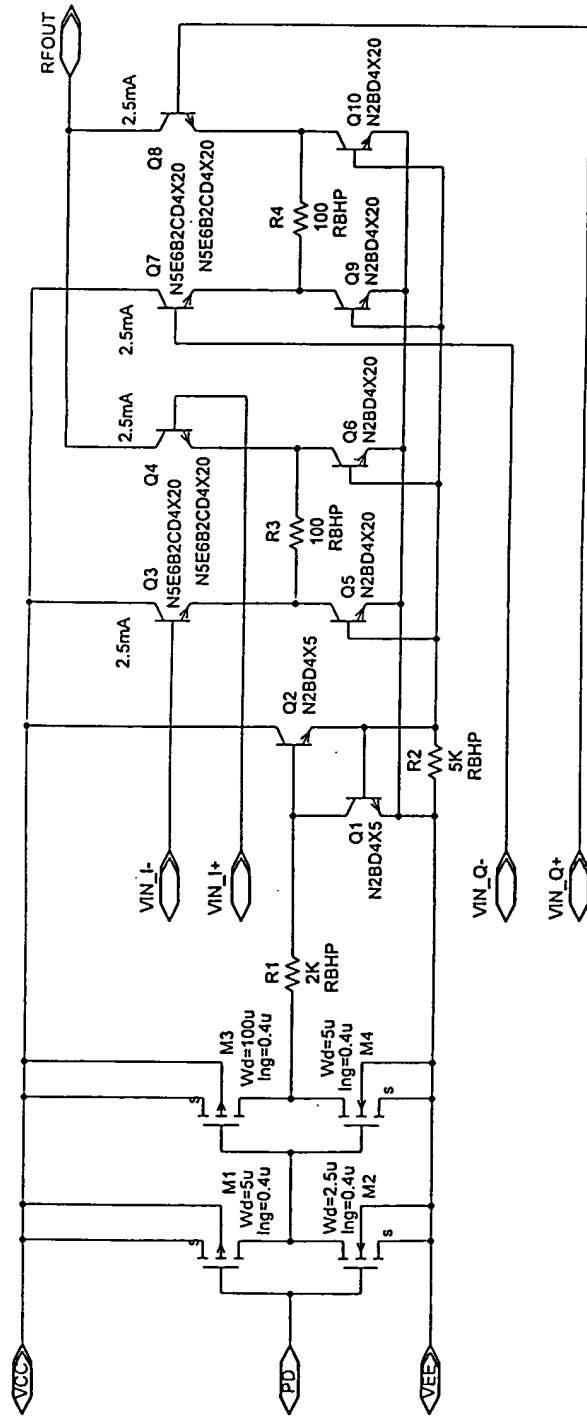


FIG. 153

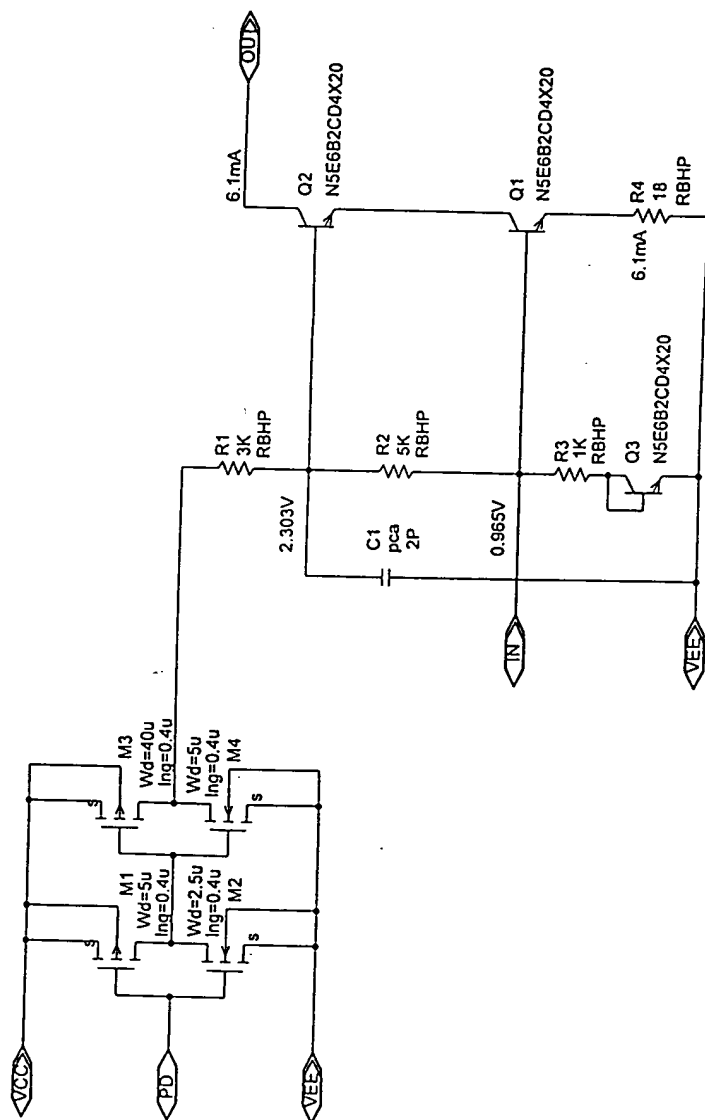
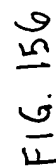


FIG. 154

1



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8500074_INV 8500074_NAND2 8500074_INV 8500074_NAND3 8500074_NAND4 8500074_NAND5 8500074_NAND6 8500074_NAND7 8500074_NAND8 8500074_NAND9 8500074_NAND10 8500074_NAND11 8500074_NAND12 8500074_NAND13 8500074_NAND14 8500074_NAND15 8500074_NAND16 8500074_NAND17 8500074_NAND18 8500074_NAND19 8500074_NAND20 8500074_NAND21 8500074_NAND22 8500074_NAND23 8500074_NAND24 8500074_NAND25 8500074_NAND26 8500074_NAND27 8500074_NAND28 8500074_NAND29 8500074_NAND30 8500074_NAND31 8500074_NAND32 8500074_NAND33 8500074_NAND34 8500074_NAND35 8500074_NAND36 8500074_NAND37 8500074_NAND38 8500074_NAND39 8500074_NAND40 8500074_NAND41 8500074_NAND42 8500074_NAND43 8500074_NAND44 8500074_NAND45 8500074_NAND46 8500074_NAND47 8500074_NAND48 8500074_NAND49 8500074_NAND50 8500074_NAND51 8500074_NAND52 8500074_NAND53 8500074_NAND54 8500074_NAND55 8500074_NAND56 8500074_NAND57 8500074_NAND58 8500074_NAND59 8500074_NAND60 8500074_NAND61 8500074_NAND62 8500074_NAND63 8500074_NAND64 8500074_NAND65 8500074_NAND66 8500074_NAND67 8500074_NAND68 8500074_NAND69 8500074_NAND70 8500074_NAND71 8500074_NAND72 8500074_NAND73 8500074_NAND74 8500074_NAND75 8500074_NAND76 8500074_NAND77 8500074_NAND78 8500074_NAND79 8500074_NAND80 8500074_NAND81 8500074_NAND82 8500074_NAND83 8500074_NAND84 8500074_NAND85 8500074_NAND86 8500074_NAND87 8500074_NAND88 8500074_NAND89 8500074_NAND90 8500074_NAND91 8500074_NAND92 8500074_NAND93 8500074_NAND94 8500074_NAND95 8500074_NAND96 8500074_NAND97 8500074_NAND98 8500074_NAND99 8500074_NAND100

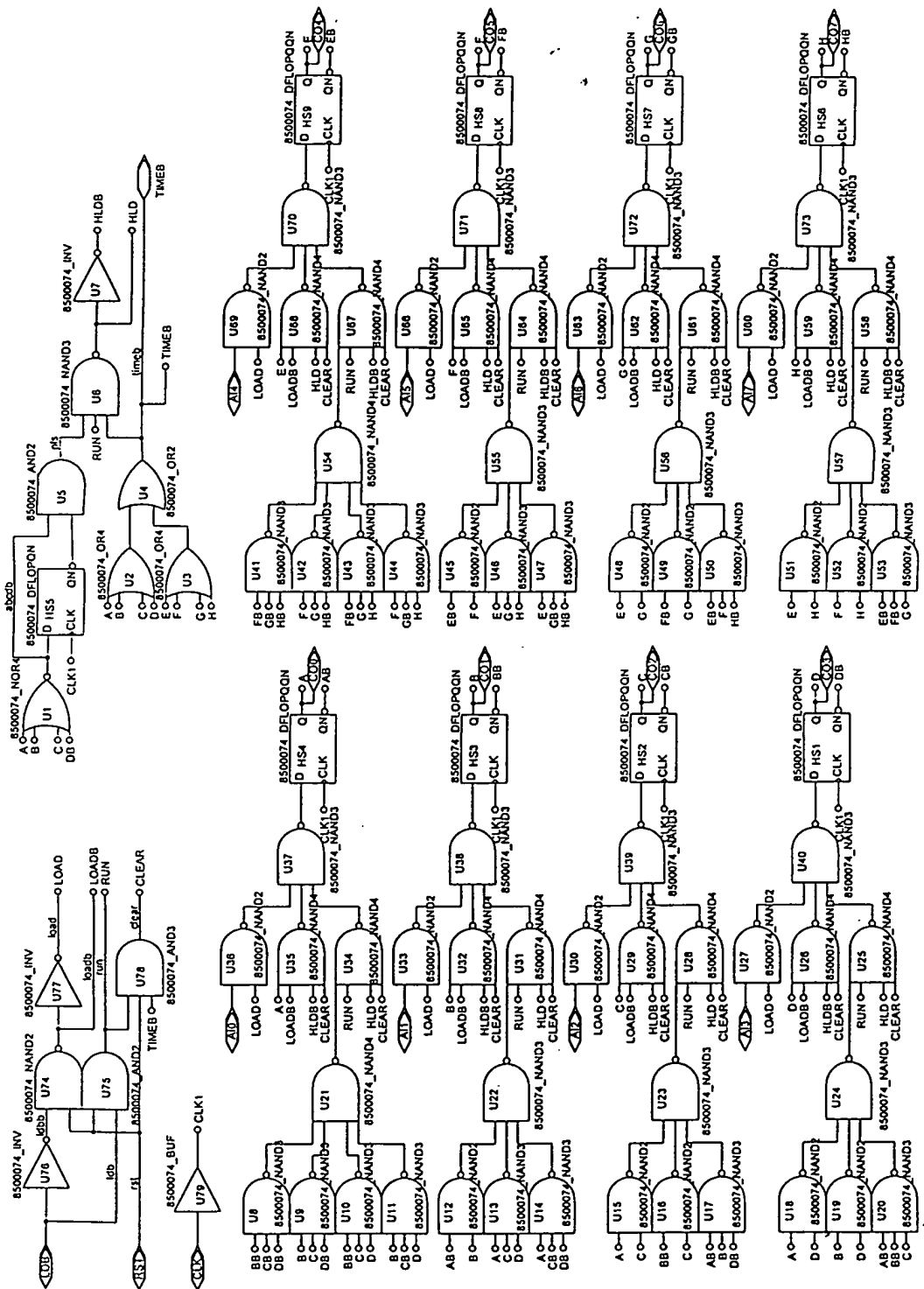


Fig. 157

FIG. 158

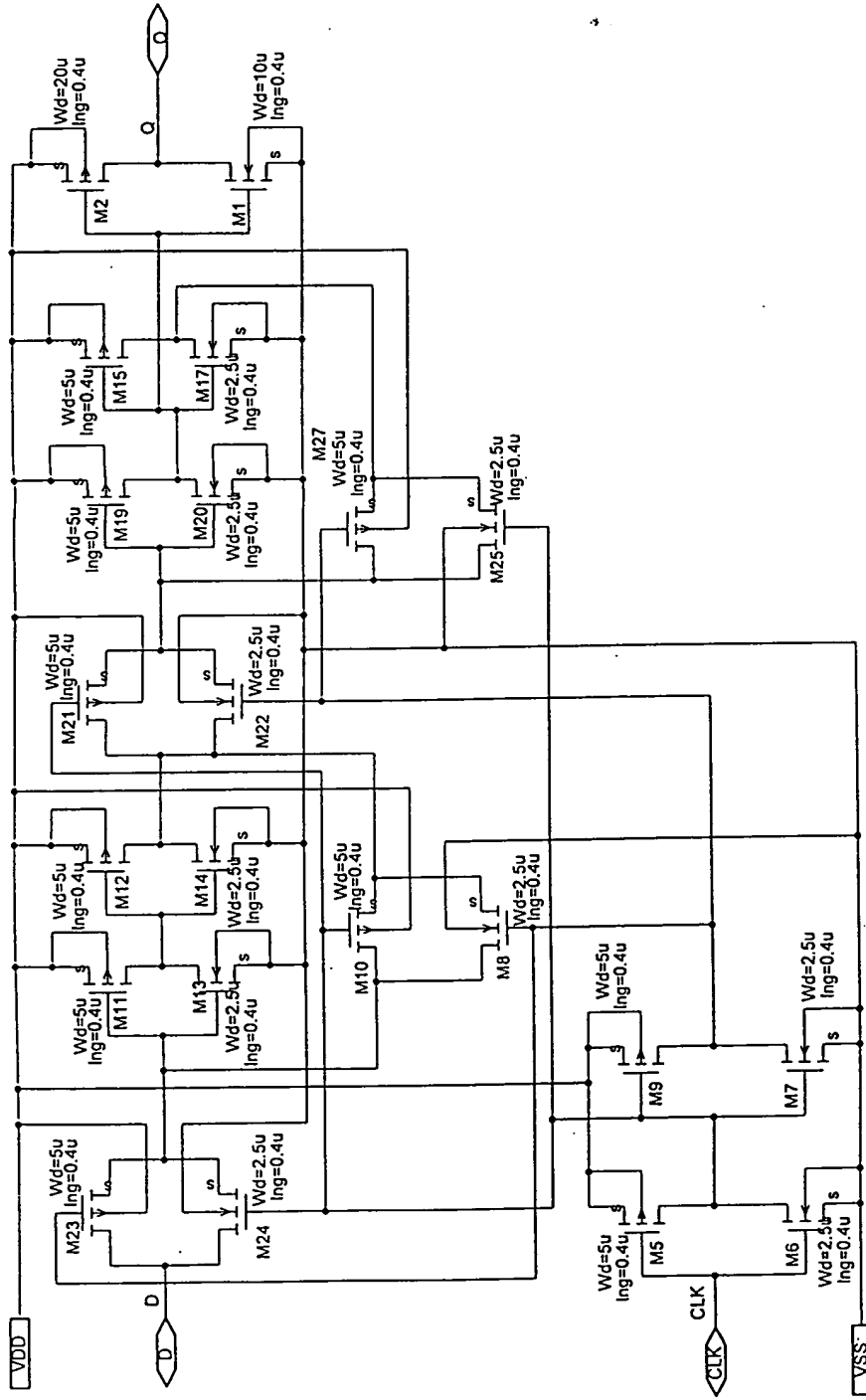


FIG. 158

004030 282850

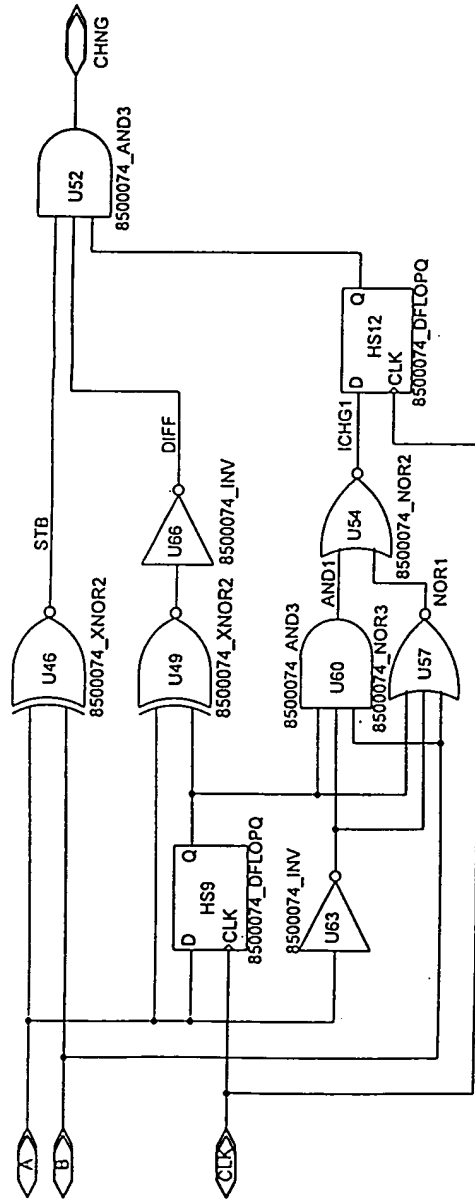


FIG. 159

004030" 6602250

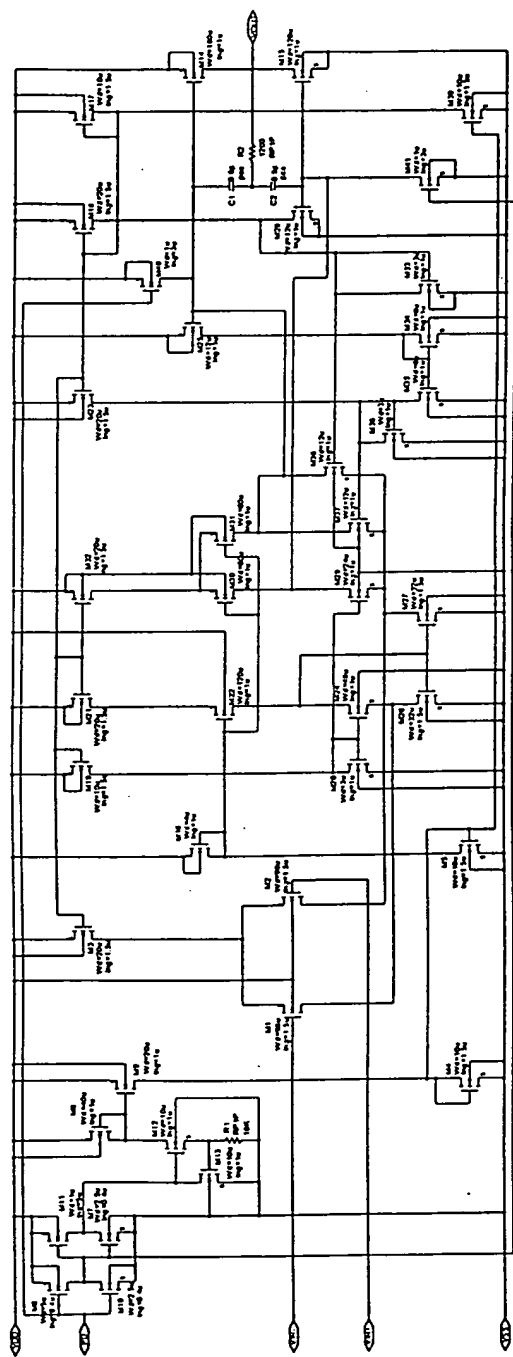


FIG. 160

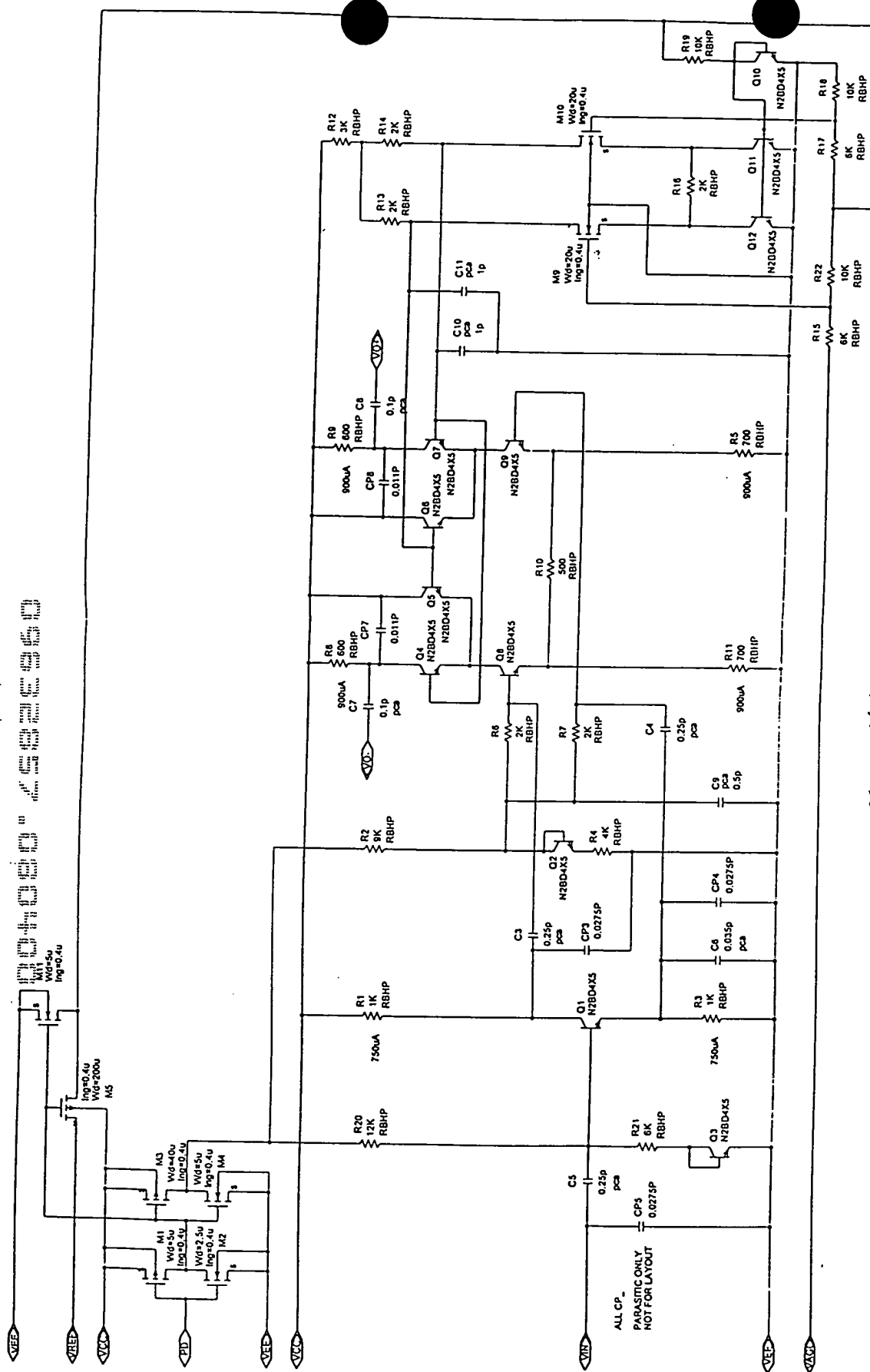


FIG. 162

FIG. 163

THE 1990S

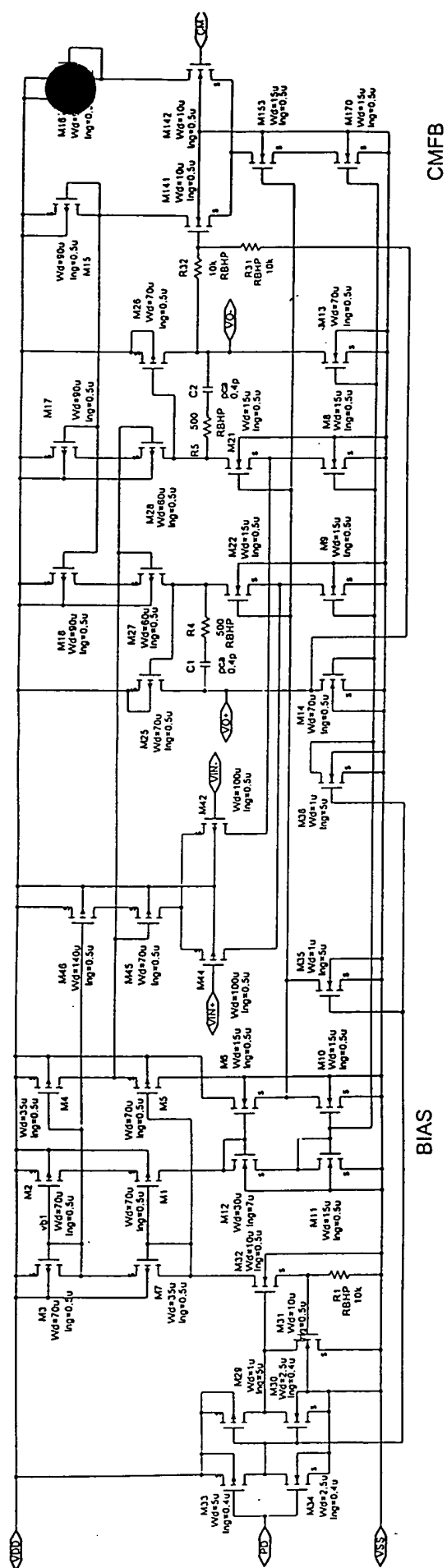


FIG. 164

BIAS

CMFB

004030" 2323E350

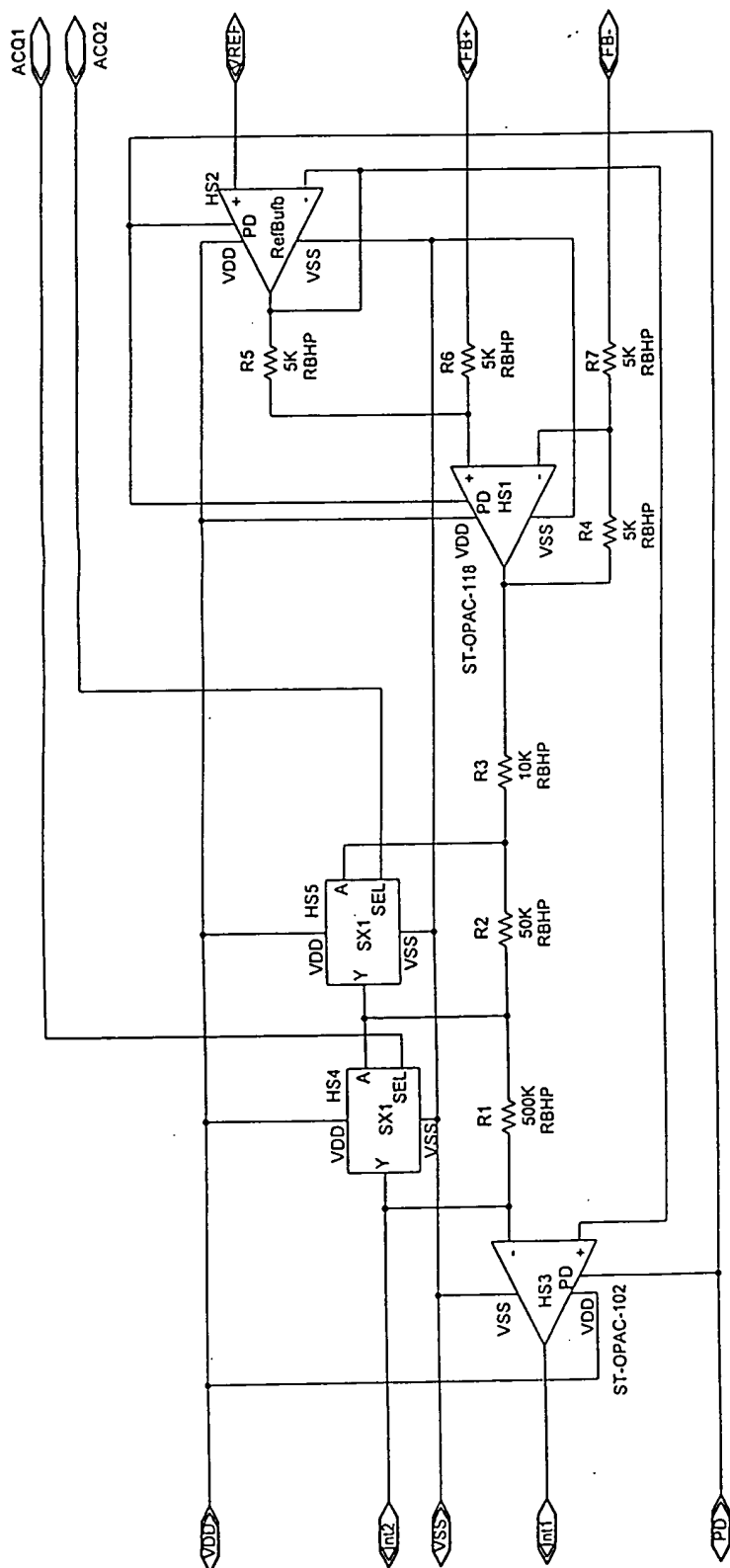


FIG. 165

004030" 4 03 06 05 0

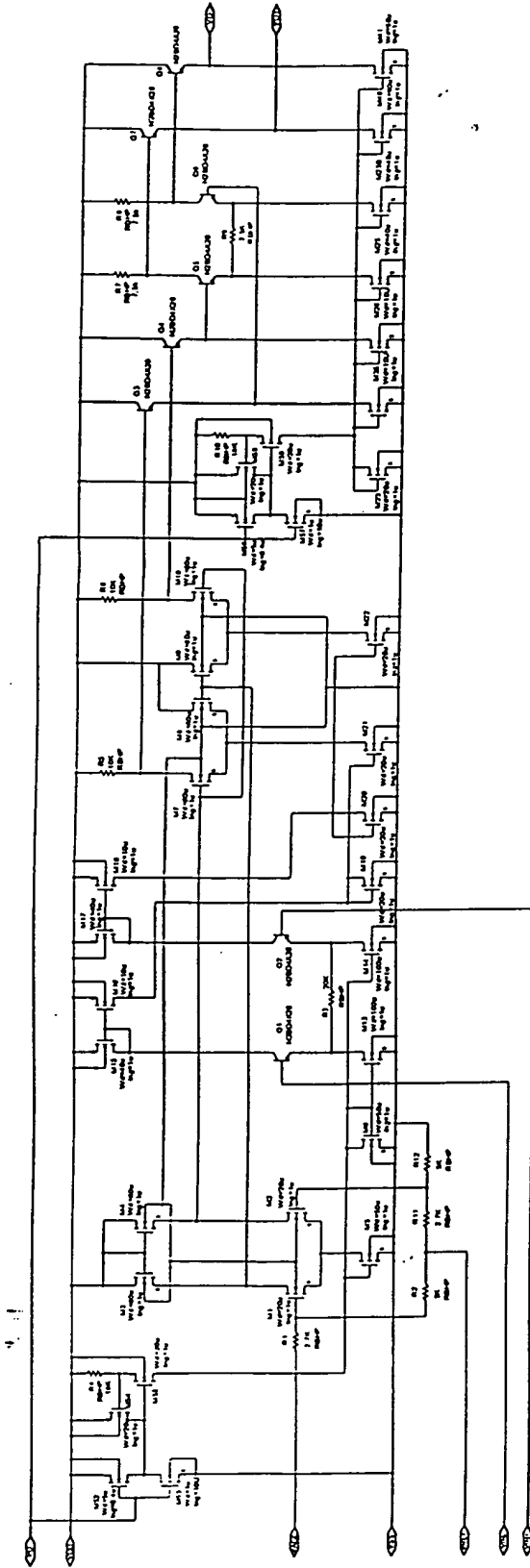


FIG. 166

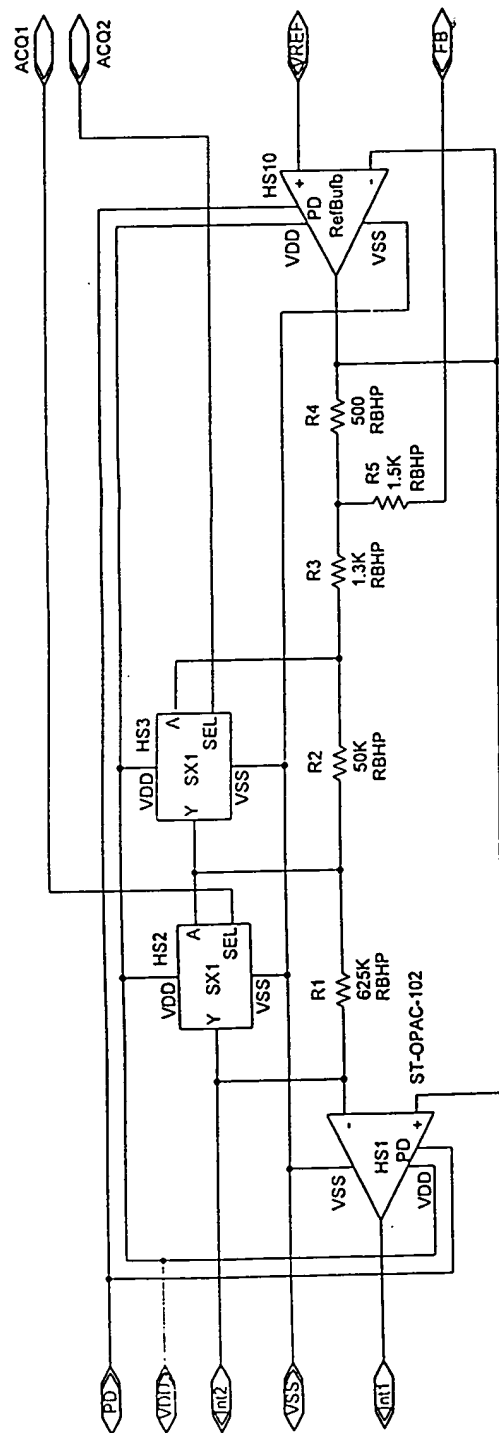


FIG. 167

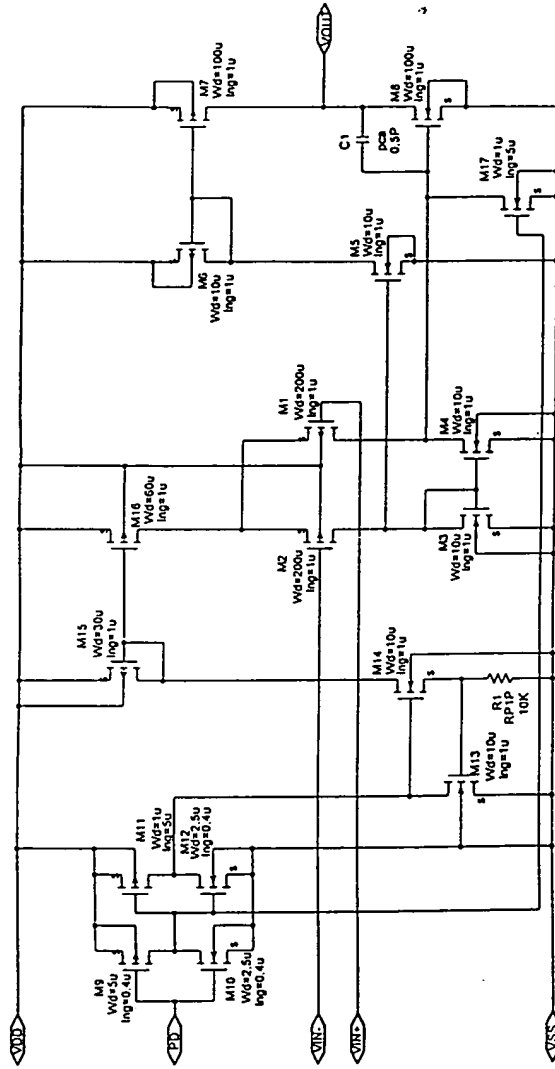


Fig. 168

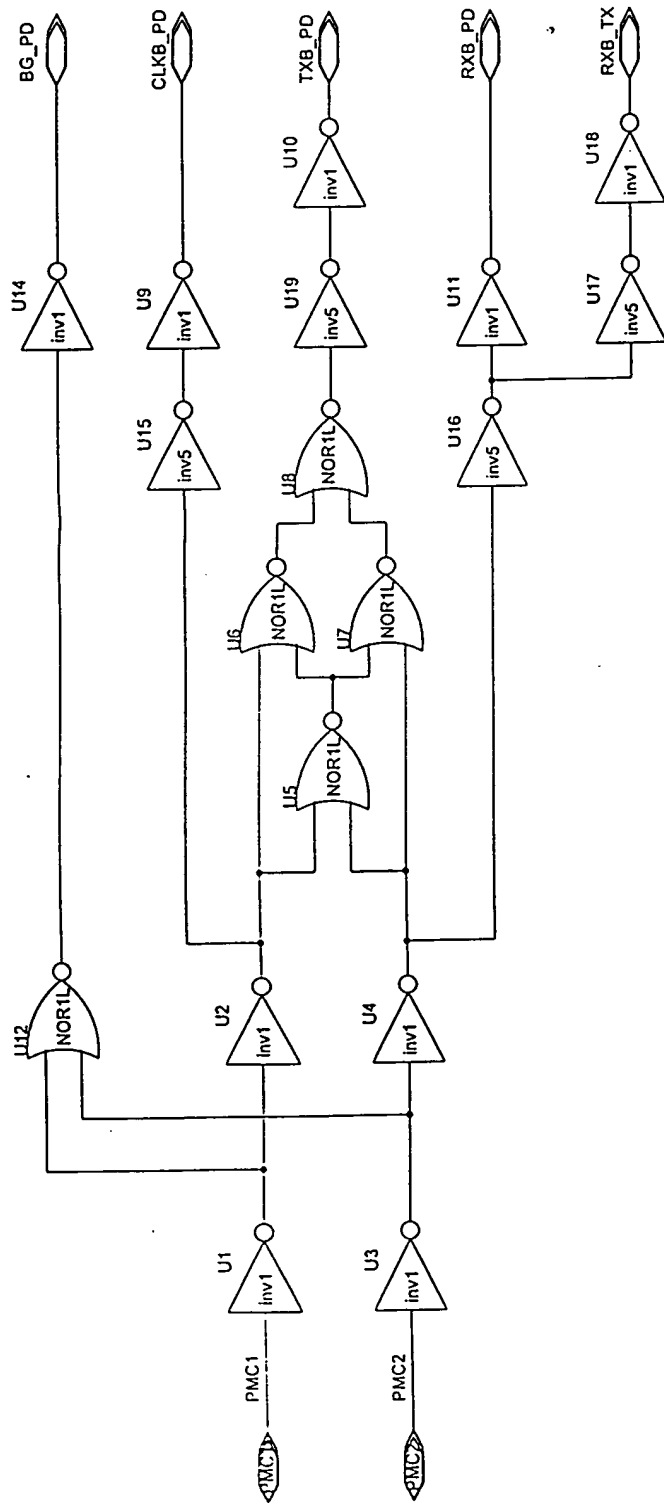


FIG. 171

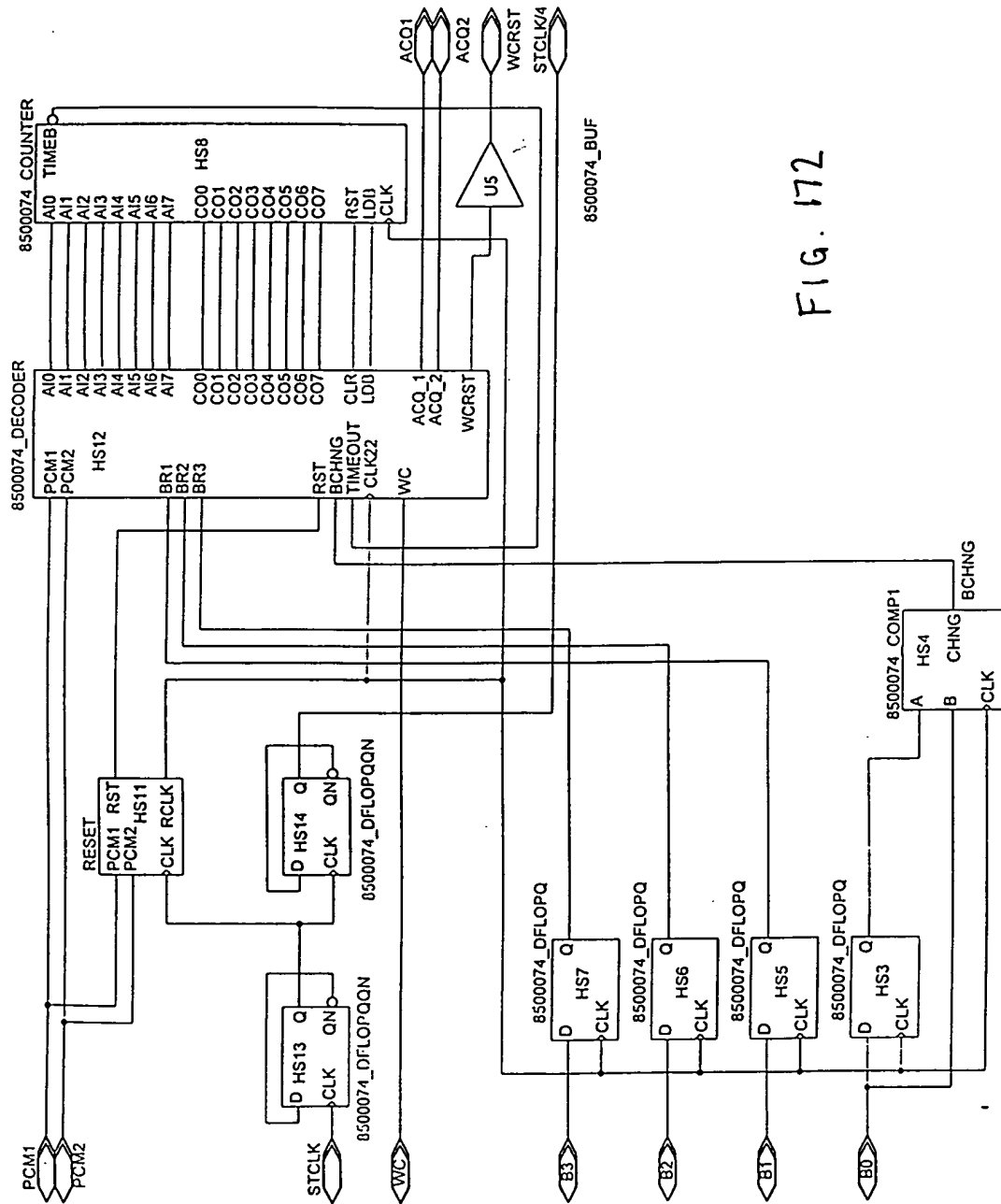


FIG. 172

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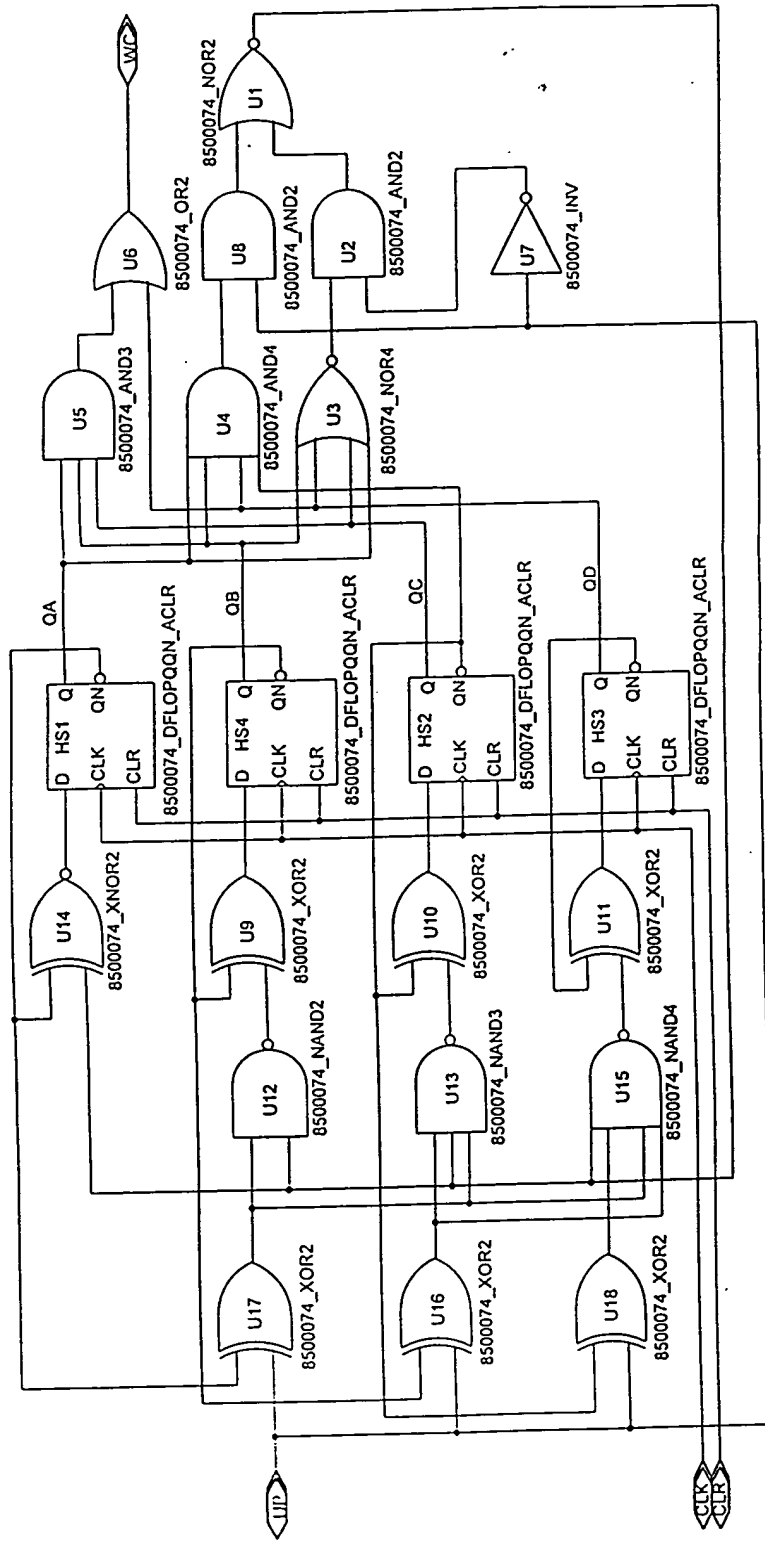


FIG. 175

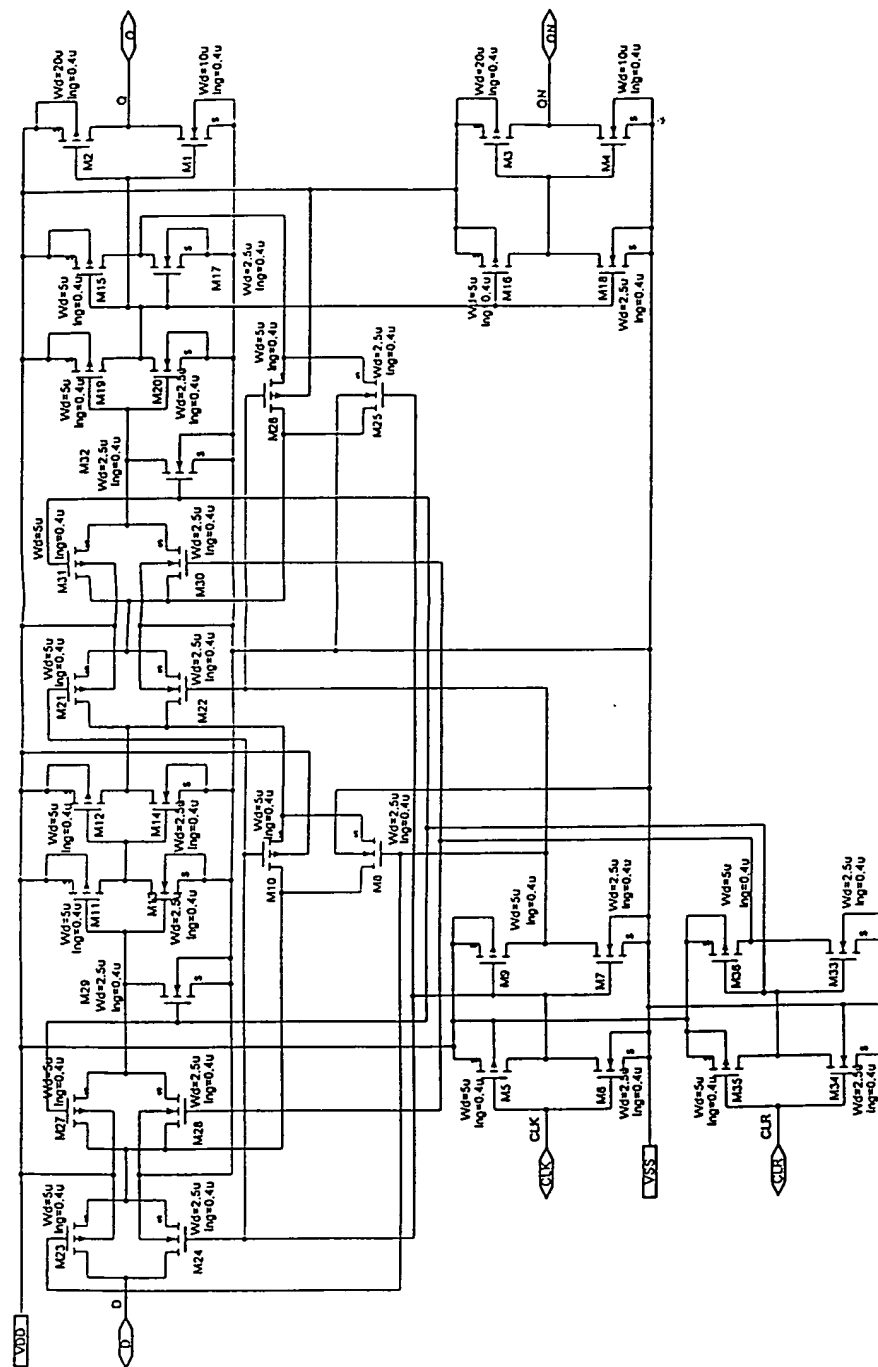
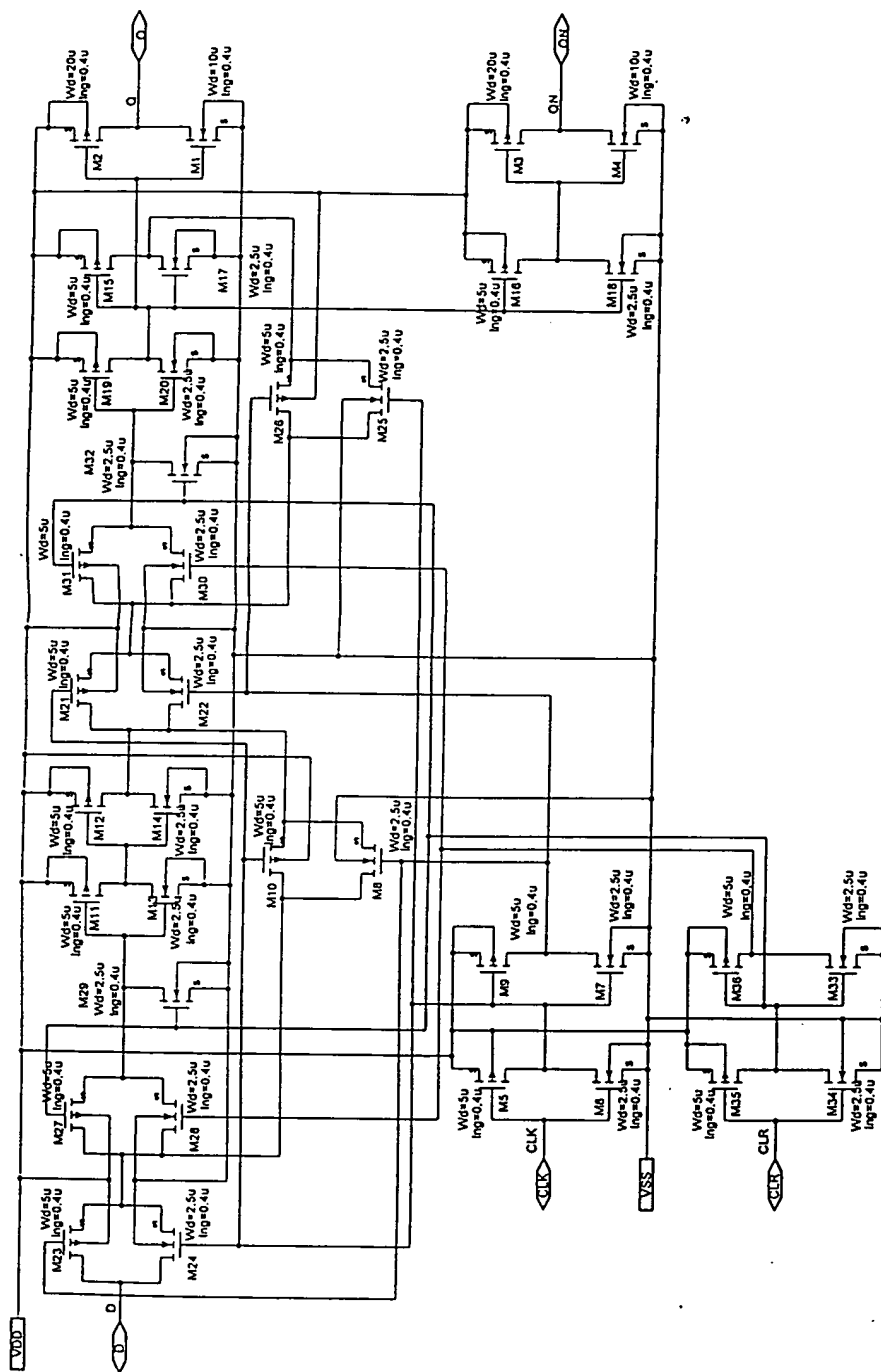


FIG. 176



004090" 2322960

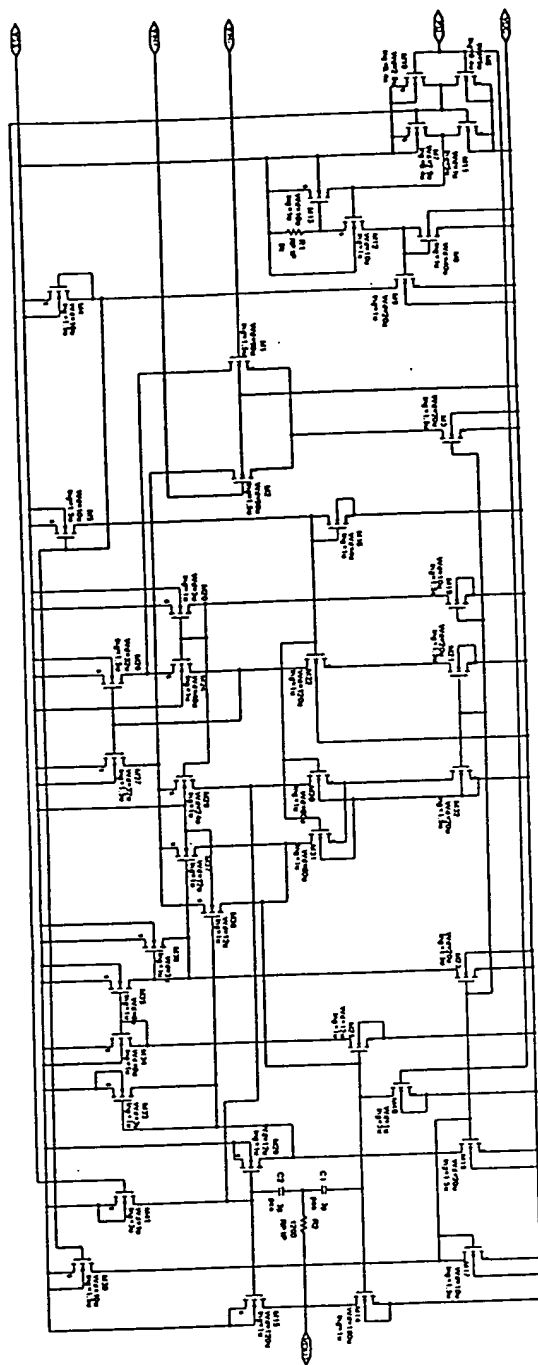


FIG. 178

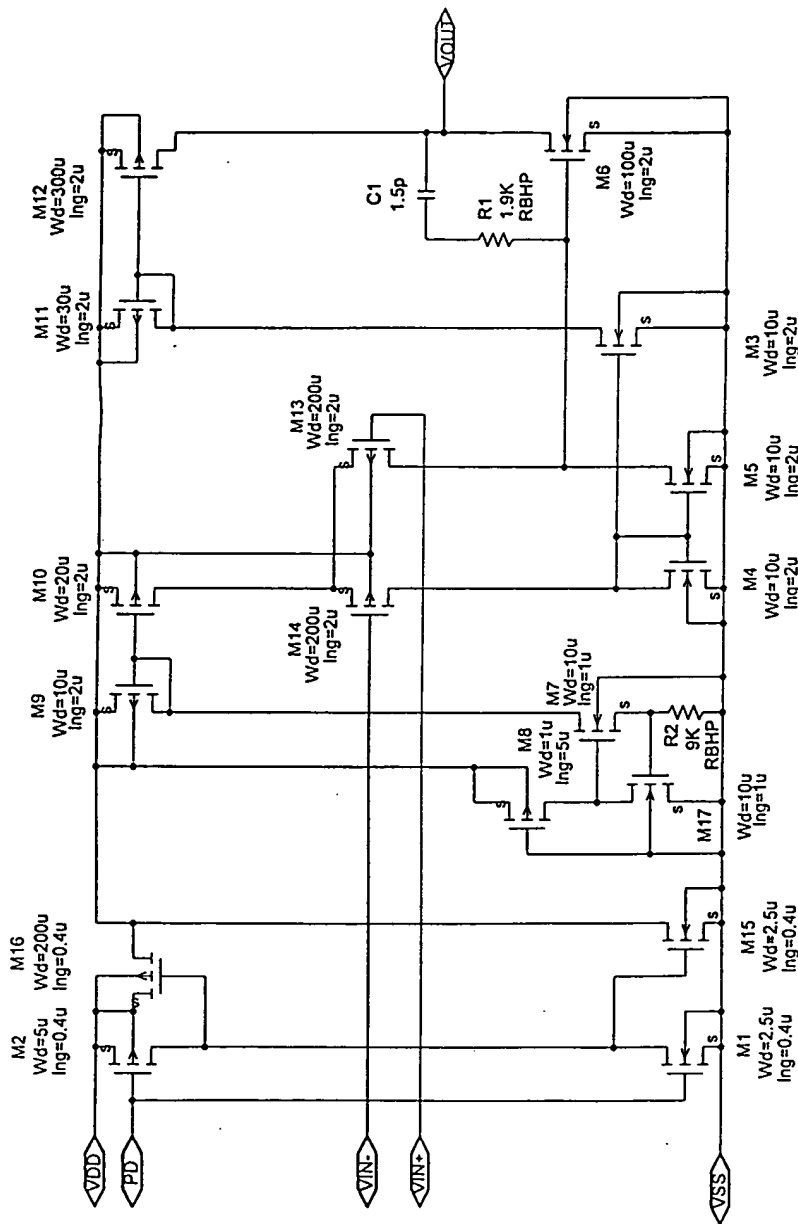
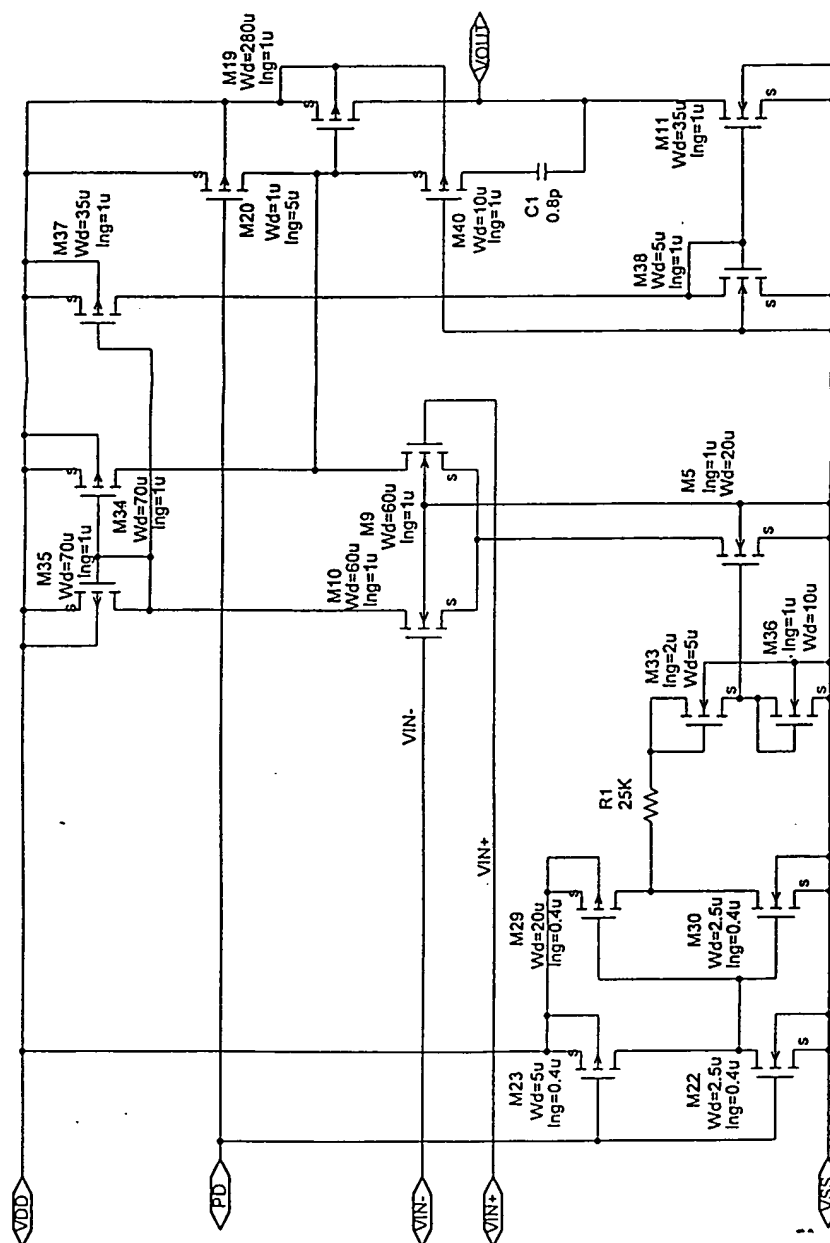


FIG. 179



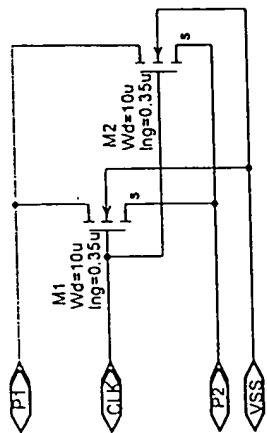


FIG. 182

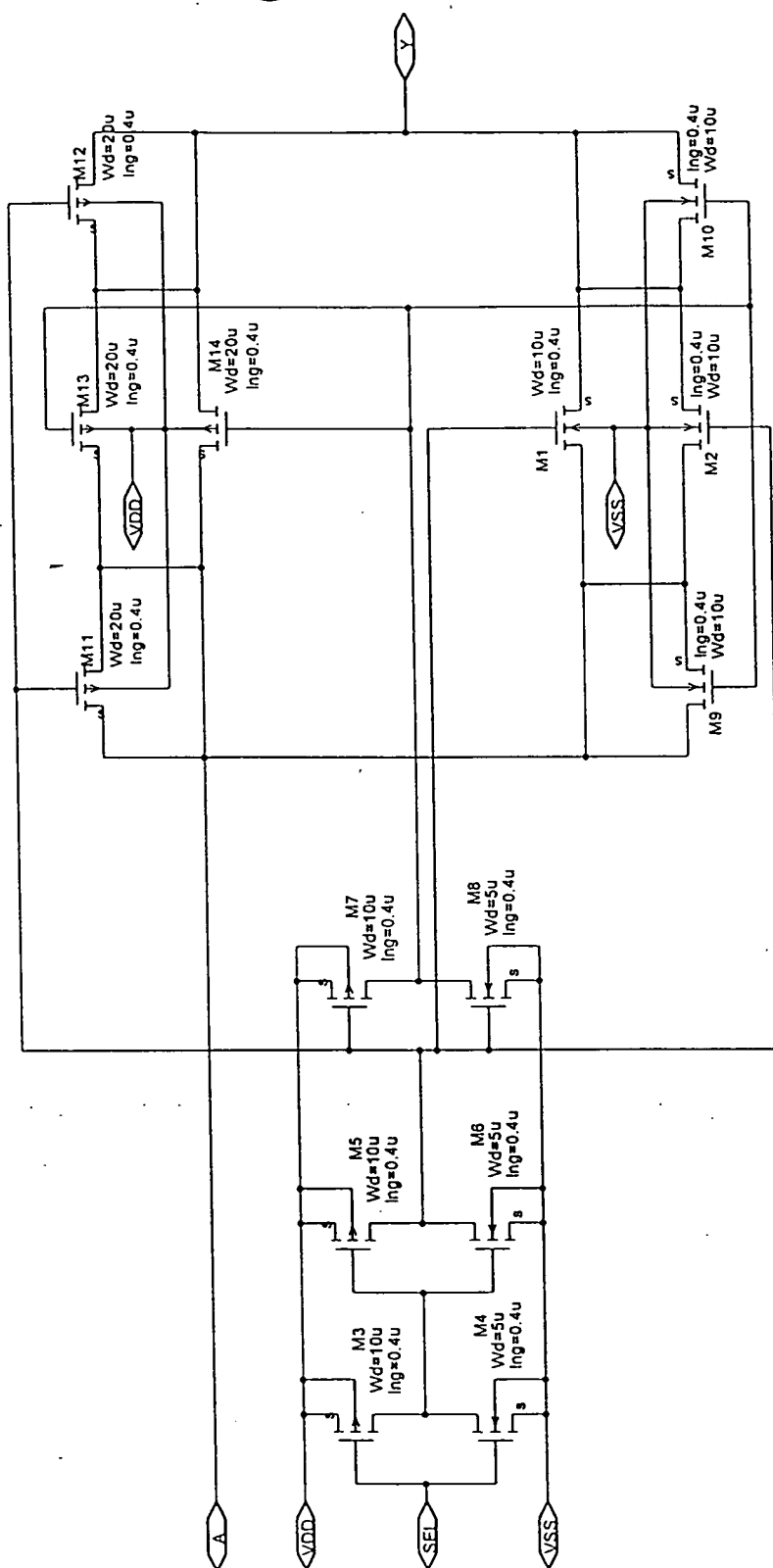


FIG. 183

C E A in Public Health

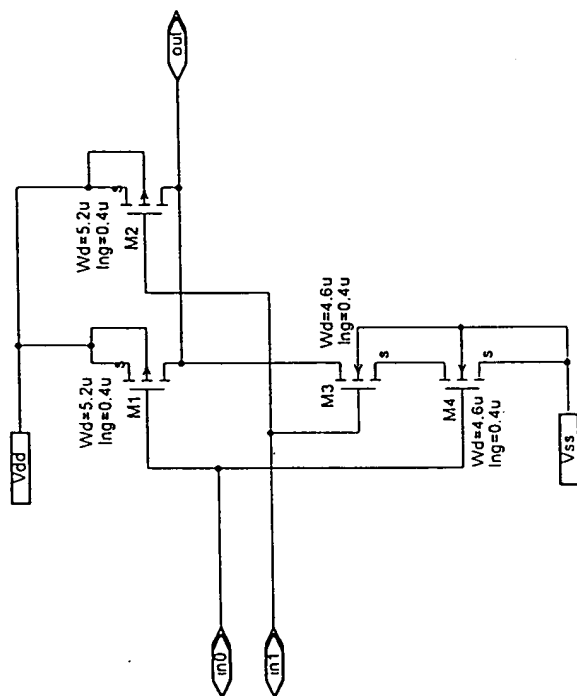


FIG. 184

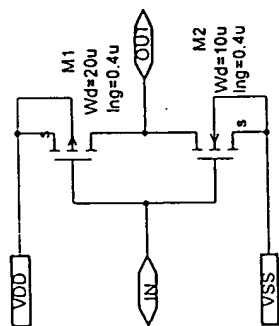


FIG. 186

004090 4322500

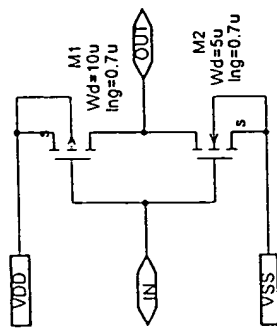


FIG. 187

004083 2632660

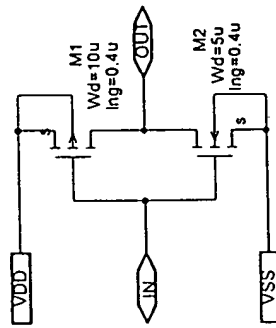


FIG. 188

004080" 46346 960

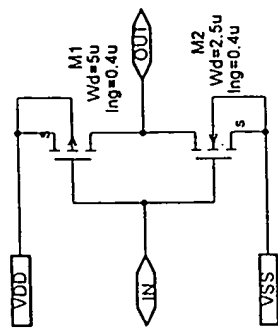


FIG. 189

004030 250250

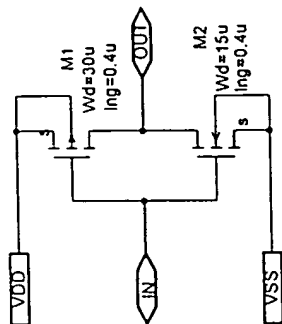


FIG. 190

004030" 2532360

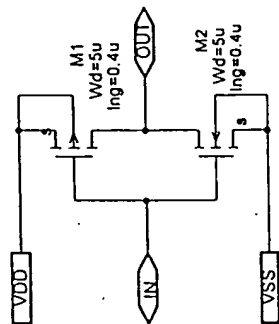


FIG. 191

004093" 25022960

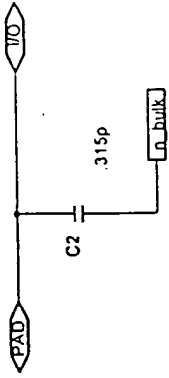


FIG. 192

004030 25022950

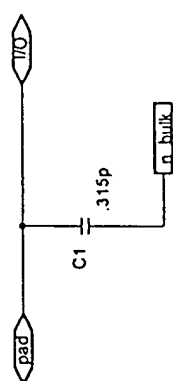


FIG. 193

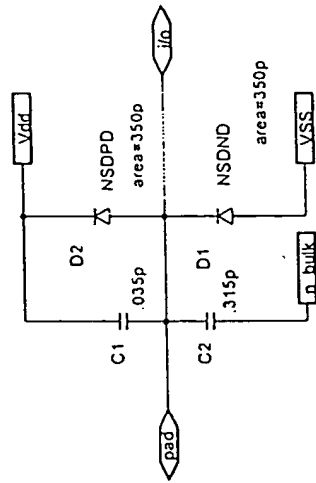


FIG. 194

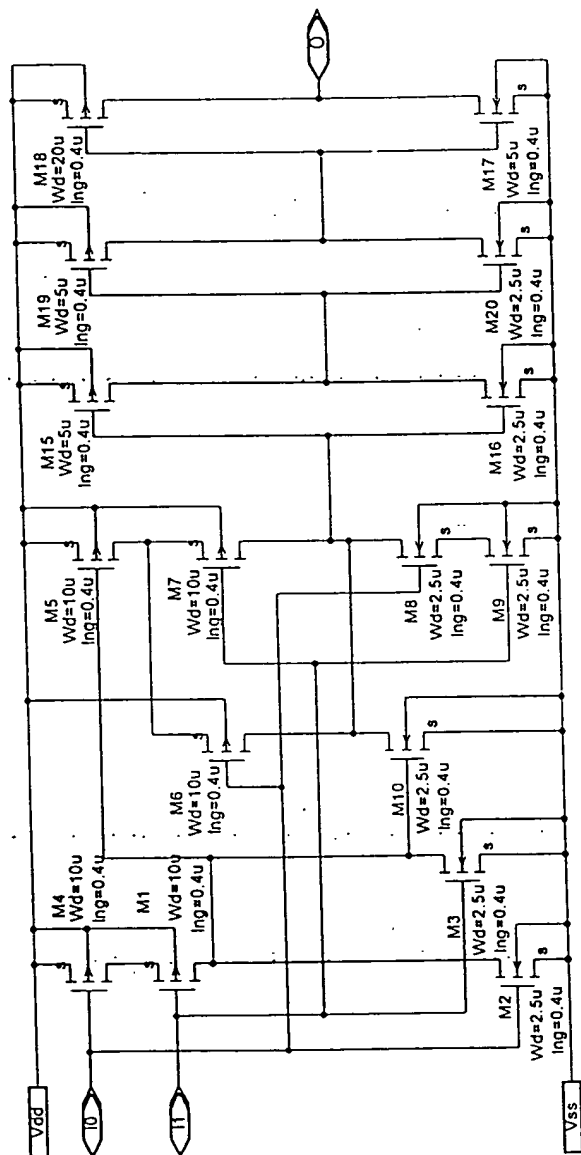


FIG. 195

FIG. 196

[illegible]

FIG. 197

004030 2582E260

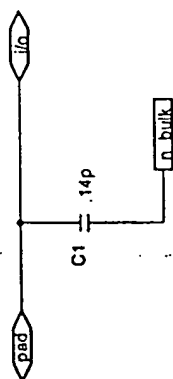


FIG. 198

004000 2532E050

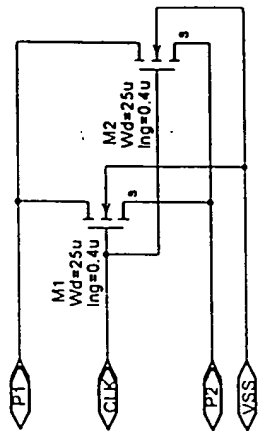


FIG. 199

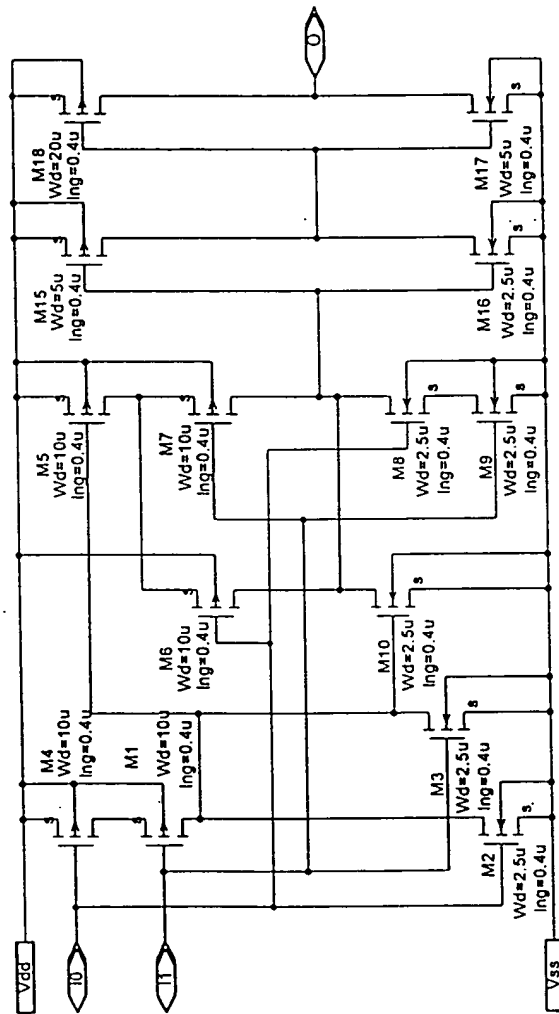


FIG. 200

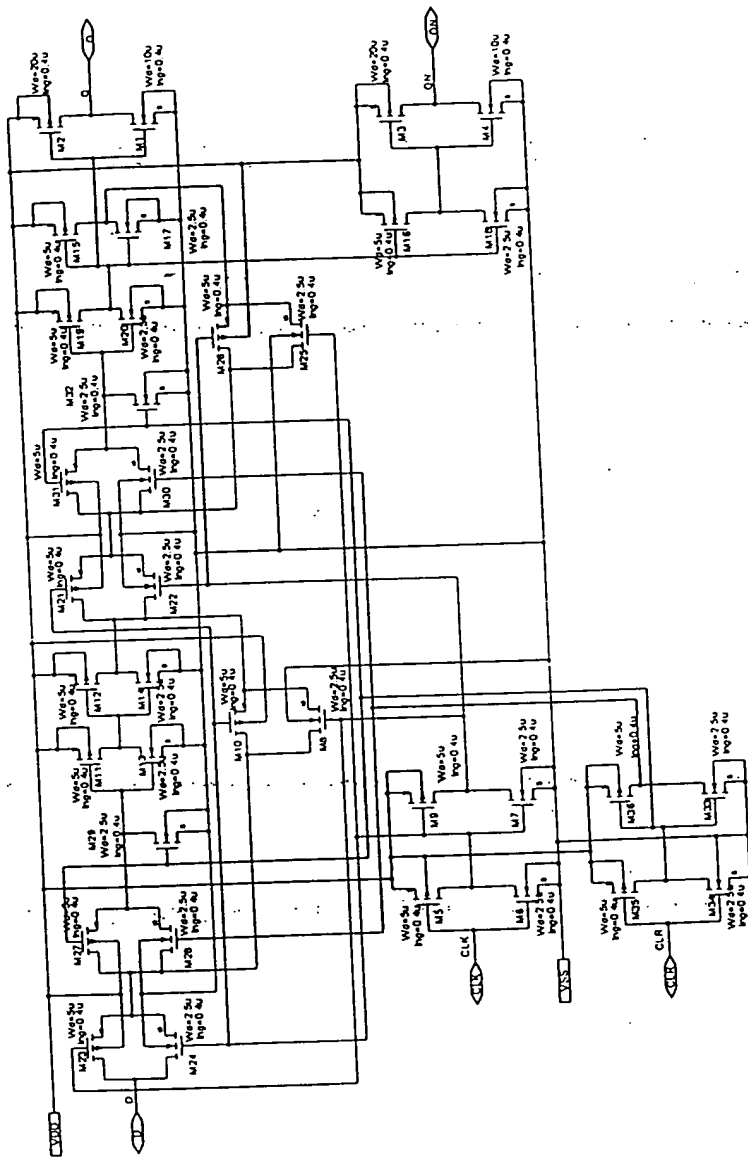


FIG. 201

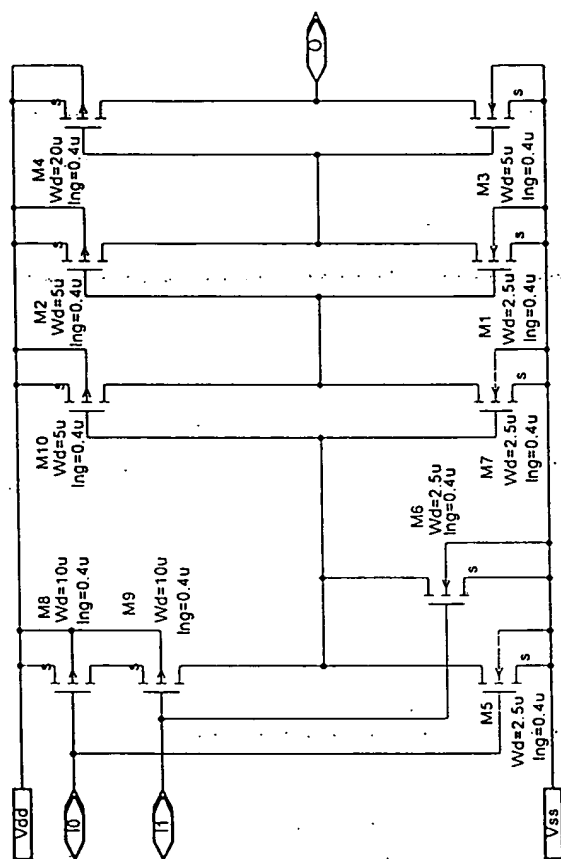


FIG. 202

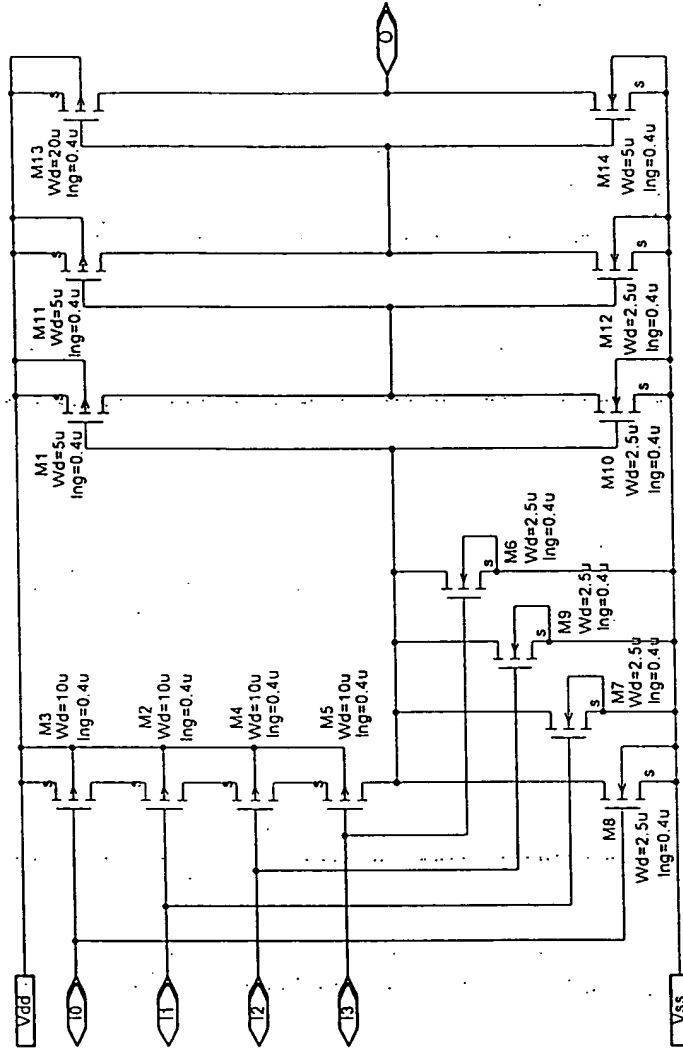


FIG. 203

1. The first step is to identify the problem or goal. This involves understanding the current situation and what needs to be achieved.

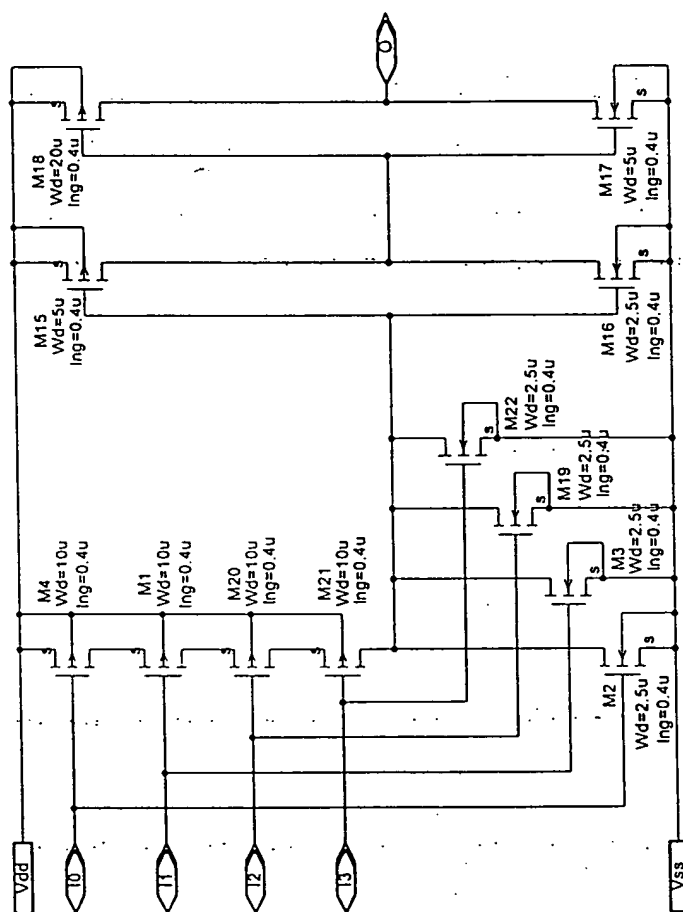


FIG. 204

004000 400000

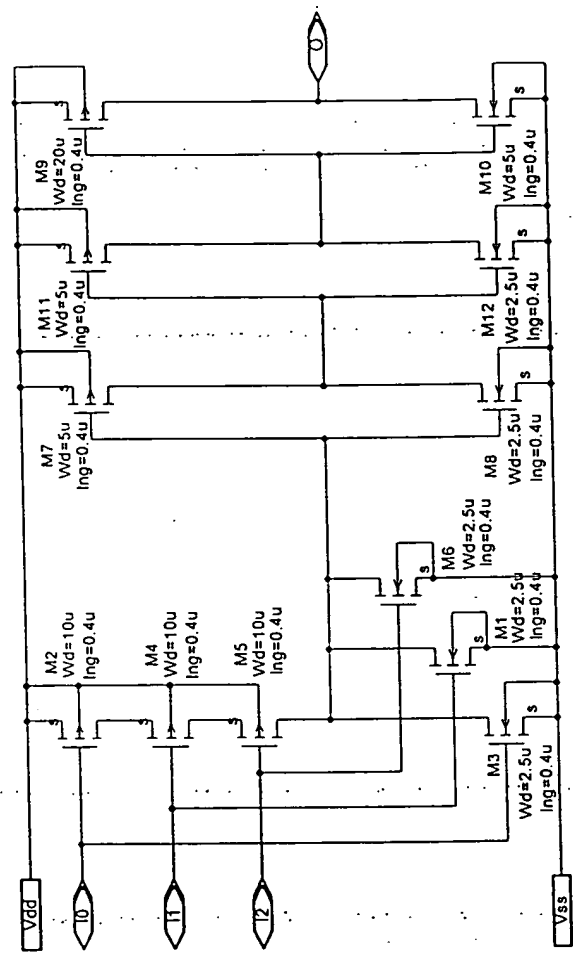


FIG. 205

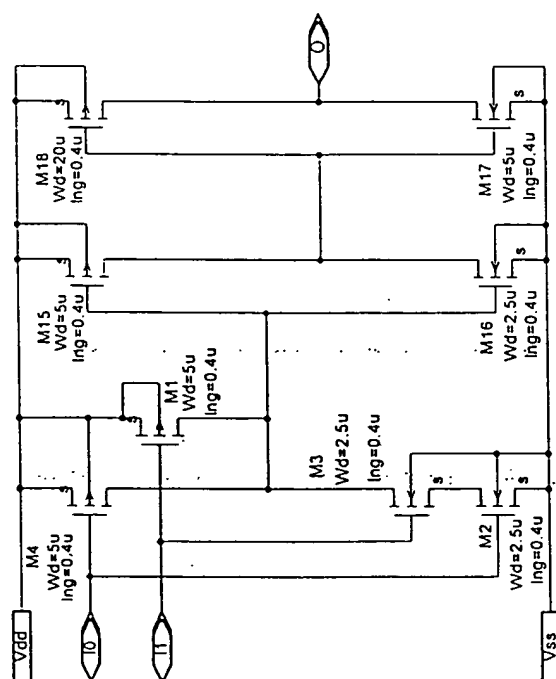
[illegible]

FIG. 206

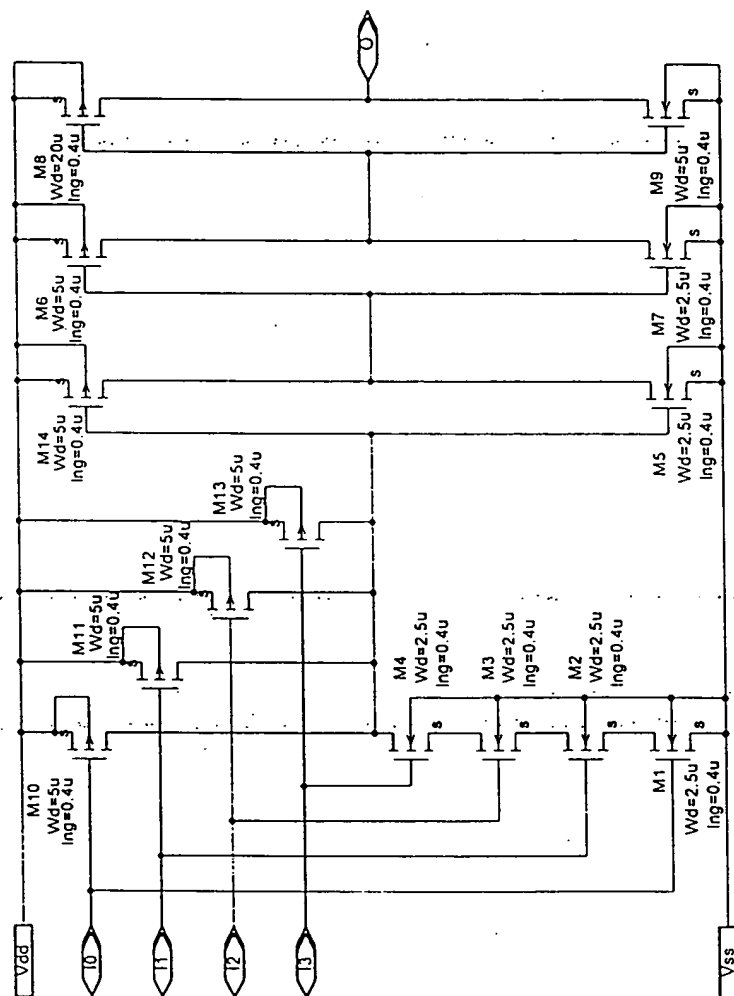


FIG. 207

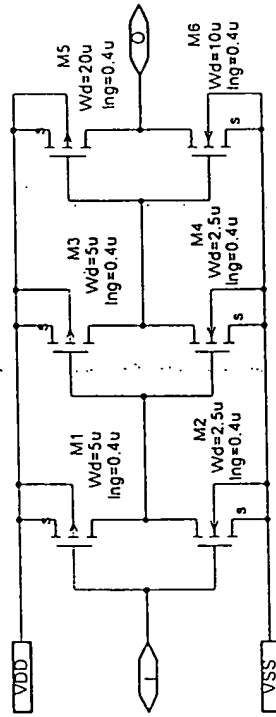


FIG. 208

THE **NEW** **YORK** **PUBLIC** **LIBRARY**

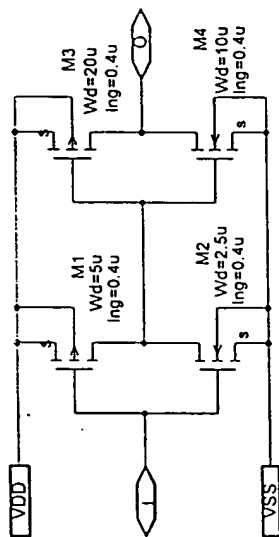
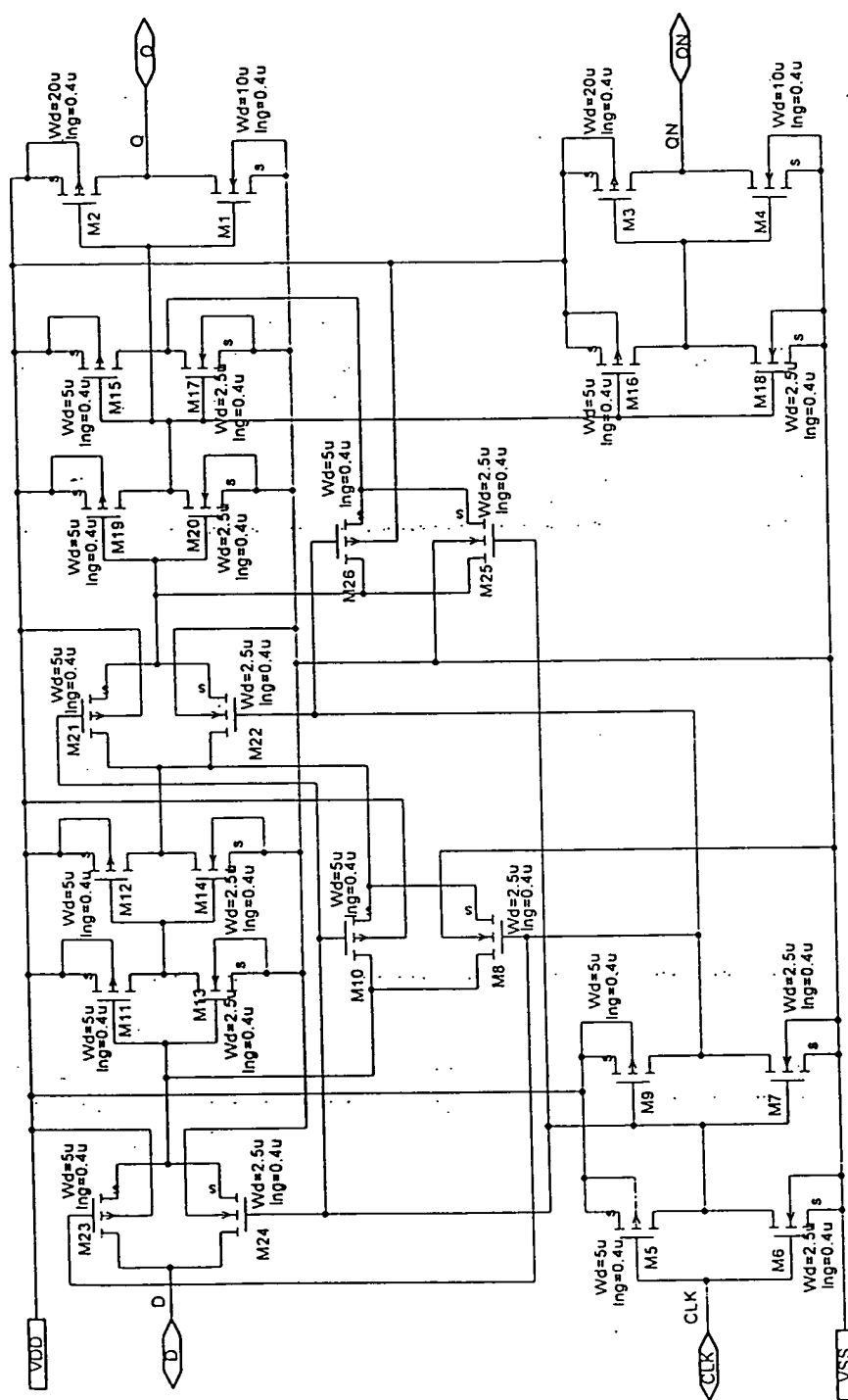


FIG. 209



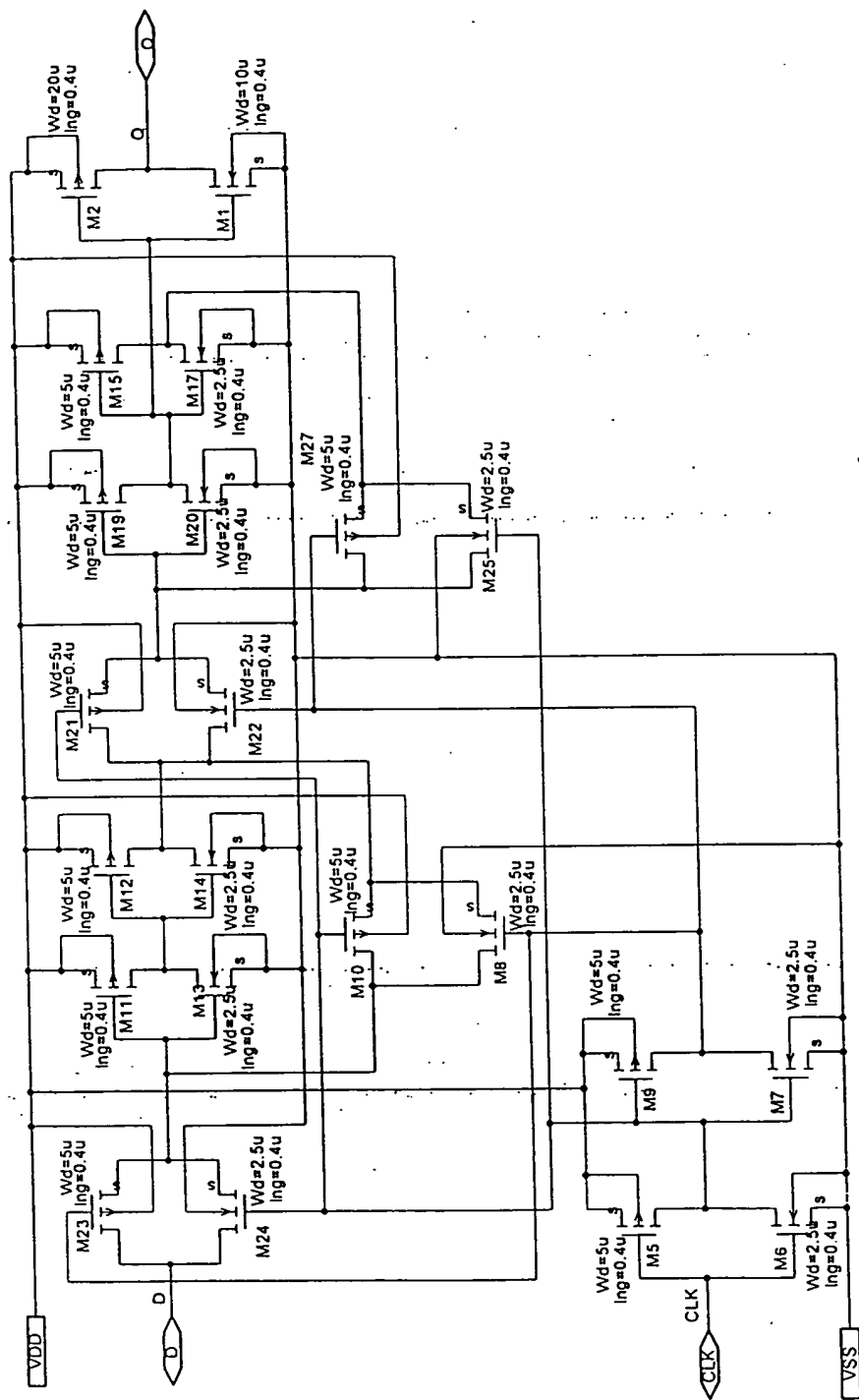


FIG. 211

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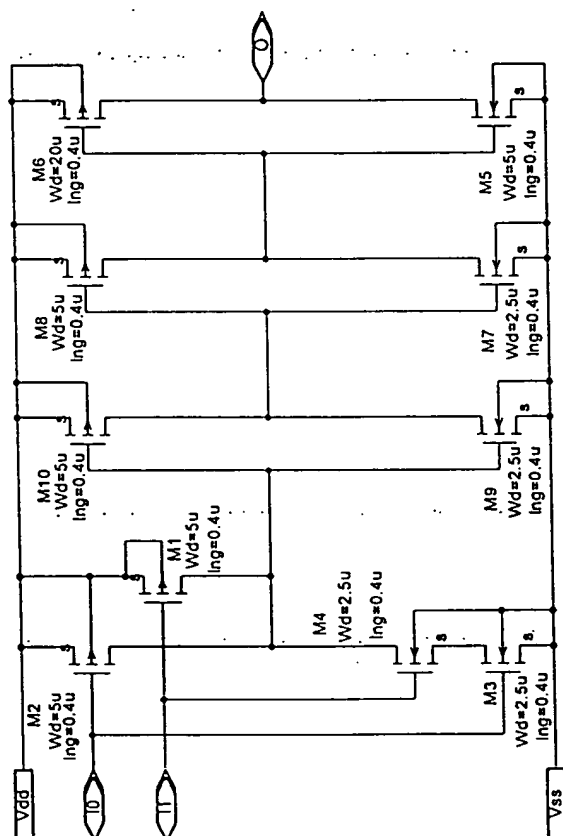


FIG. 212